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Learn a language, live longer?

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Learn a language, live longer?

*An investigation into views on late-life language learning and
an experimental study on its cognitive and social benefits*



Marith Assen & Rhomé Busstra

Wetenschapswinkel Taal, Cultuur en Communicatie

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Running head: LATE-LIFE LANGUAGE LEARNING

Learn a language, live longer?

An investigation into views on late-life language learning and an experimental study on its
cognitive and social benefits

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Abstract

In a society in which the number of older adults is rapidly increasing, healthy ageing is becoming more and more important. Since the bilingual cognitive advantage has been a well-known concept for several years, this study investigated whether learning a language in late adulthood could have cognitive benefits for older adults (>65) who have not been bilingual throughout their lives. Two studies were conducted, the first of which concerned a language learning history questionnaire which inquired after older adults' previous language learning experiences and their views on language learning in later adulthood. Study II investigated the potential cognitive benefits of a communicative ten-hour English language course taught to a group of 10 older adults over the course of two weeks. Before and after the course, three cognitive tests were administered: the Corsi Block Tapping Task, the Flanker task, and the Modified Wisconsin Card Sorting Test. Moreover, mental well-being was assessed using the Warwick-Edinburgh Mental Well-Being Scale. It was found that even a brief language course can significantly improve participants' inhibitory control and task switching. No significant changes in working memory or mental well-being could be found, although this might be due to the duration and participants of this study. Language learning, therefore, seems to have great potential in preventing cognitive decline in later adulthood, but more extensive research is needed necessary to further explore its benefits.

Introduction

“Forever young, I want to be forever young”

(Alphaville, *Forever Young*)

In today’s society, masking the effects of ageing seems to be highly important. Yet even though many agree with Alphaville and would like to stay young forever, this is unfortunately not (yet) possible. Everyone will age, and while one’s physical appearance is perhaps the most visible, it is not the only aspect that changes as one grows older: the brain, and with that, cognitive functioning, also declines. This will, for instance, result in reduction of white brain matter, as well as a decrease in mental flexibility.

However, not all older adults are affected to the same degree by cognitive ageing effects. Certain factors and experiences, such as a higher educational level and the learning of new skills, have been linked to higher levels of cognitive reserve, which allows the brain to better cope with pathological changes (Fratiglioni & Wang, 2007). Some people, therefore, have higher cognitive reserve and may experience ageing effects to a lesser degree. Bilingualism, too, has been shown to result in enhanced cognitive functioning (Grant, Dennis, & Li, 2014), and has been suggested to result in more mental flexibility and higher cognitive reserve (Antoniou, Gunasekera, & Wong, 2013).

It is crucial that researchers continue to search for ways in which people’s cognitive health can be maintained, especially since it is expected that the population of older adults will triple in less developed countries and will rise from 16% to 26% in developed countries (“Ageing societies: The benefits, and the costs, of living longer,” 2009). Care for older adults will inevitably become a major financial concern for governments worldwide, and it is worthwhile to examine ways in which cognitive decline can be prevented. Several studies

have already proposed potential solutions, such as physical activity (e.g. De Souto Barreto et al., 2017), but also specific cognitive training such as the Advanced Cognitive Training for Independent and Vital Elderly (ACTIVE) programme, which aims to improve memory, logical reasoning, and speed of processing (Ball et al., 2002).

The present study uniquely adds to the existing research on healthy ageing measures by investigating how language training might be included as a cognitive intervention programme. In order to examine this, two studies will be carried out. First, an inventory will be made of how older adults view their own abilities to learn a new language and what their language learning preferences are, which will encompass Study I. Subsequently, Study II will examine the effects of a short, intensive foreign language course on older adults' cognitive abilities. Collectively, these two studies aim to answer the research questions of how older adults would prefer to learn a foreign language later in life, and, more importantly, whether a language course in later adulthood is a successful cognitive intervention programme.

1. Background

“Population ageing is one of humanity’s greatest triumphs. It is also one of our greatest challenges” (WHO, 2002, p. 6). People’s life expectancy is increasing, thanks to human advances in medicine and nutrition, but this also means that the number of older adults is increasing at a significant rate (Eurostat, 2018). This in turn is seen as a societal and economic challenge, not in the first place because factors such as physical health tend to decline with age. Therefore, the concept of healthy ageing is becoming more and more important, and it has become an area of increasing interest for governments and organisations worldwide, such as the World Health Organisation (WHO).

According to Pachana (2017), the term ‘healthy ageing’ is mostly used to refer to physical health. Whilst this is one of the most affected areas of ageing, there are many more aspects that determine one’s quality of life in later adulthood. The WHO has therefore introduced the more general term ‘active ageing’, which also encompasses psychological, social, and economic implications of ageing (2002). However, since the term healthy ageing is much more widely used, the current study will continue to use this term, but with an important note that ‘healthy’ is taken to refer to both physical as well as mental and social health.

Grassi, Marsan, and Riva (2014) further defined healthy ageing as a process that requires a healthy lifestyle, which, at its basis, includes a healthy and sustainable diet and physical activity, but also cognitive training. The researchers mainly focused on the physical changes that occur in the body as people age, such as loss of strength and muscle mass, but they also listed cognitive impairment as a characteristic of unhealthy ageing, and highlighted the importance of cognitive training to prevent cognitive decline.

Although it is widely recognised that healthy ageing is becoming more important, it is unfortunately still an area in which research is rather limited; much of the research on older

adults has focused on causes and results of cognitive decline, i.e. “what older adults ‘are not able to do any more’” (Ramírez-Gómez, 2016, p. 2), whereas more studies are needed which focus on what older adults can do to prevent this decline. The following sections will first explore the physical and mental changes older adults might experience as they grow older, and will then continue by exploring ways in which this cognitive and mental decline might be prevented.

1.1 Neurological changes with ageing

Both structural and functional changes occur in the nervous system when people age, although not everyone experiences the same changes and at a similar rate. Most obviously, the brain decreases in size and weight with age, accompanied by an enlargement of the ventricles (Peters, 2006), which most iconically results in memory decline. Moreover, ventricle enlargement in older adulthood has been associated with mild cognitive impairment and Alzheimer’s disease (Nestor et al., 2008). Other changes related to the decreasing brain size include cerebral atrophy, reduction in neurotransmitters, neuronal loss, and blood flow restrictions (Nagaratnam, Nagaratnam, & Cheuk, 2016). Not only do these changes cause a decrease in coordination and balance, but the processing speed of older adults in general is also compromised, making them overall slower to respond.

Not all areas of the brain are affected similarly, however, and the effect of ageing on different types of cells varies. Nagaratnam et al. (2016) stated that neuroimaging techniques have shown that older adults, especially from the age of 70 onwards, show a decrease of grey matter density, which is used to process information in the brain, as well as white matter integrity, which is responsible for transmitting signals. Cognitive functioning, therefore, often declines as people grow older. Likewise, older adults have difficulty in performing the same

amount of physical activity as when they were younger, which is due to a reduction in functioning motor units with reduced physical strength and muscle volume as a result.

Changes in neurotransmitter systems are also heavily affected by age, which is why older adults are more susceptible to illness and often need a longer period of recovery. Dopamine levels, for instance, decrease, notably in the areas of the brain associated with thinking (Troiano et al., 2010). Serotonin, often considered a natural mood stabiliser, is, like dopamine, a monoamine neurotransmitter and also declines as people age (Smith et al., 2009). This, in turn, may result in more depressed mood states in older adults in comparison to younger adults (Gottfries, 1998).

Further, a restriction in cerebral blood flow impacts older adults' quality of sleep, which mostly results in decreased sleep time and increased fragmentation of sleep periods. This results in daily tasks becoming more challenging and people often report functioning less optimally during the day (Nagaratnam et al., 2016). It has been found that insomnia is highly prevalent in people over 60, especially in women (López-Torres Hidalgo et al., 2012). Insomnia not only results in reduction in deep sleep and nocturnal awakenings, but also in secondary problems that have been associated with anxiety, stress, depression, and other psychiatric alterations.

Changes in the brain may also cause neurodegenerative disorders. For example, the previously discussed decrease in dopamine levels in the brain frequently results in Parkinson's disease, which occurs in 146 to 780 individuals per 100,000 (Nagaratnam et al., 2016). Other common neurodegenerative diseases include motor neuron diseases such as amyotrophic lateral sclerosis (ALS) and peripheral neuropathy, which are characterised by muscle weakness and altered sensation or complete loss of it, among other symptoms (Latov, 2007).

1.2 Cognitive changes with ageing

Pathological changes in the brain such as the ones mentioned previously occur in all people as they age, and often manifest as cognitive changes, most notably decline. One of the most well-known and widespread cognitive changes is the change in memory, for older adults frequently struggle to store, retain, and retrieve information (Nagaratnam et al., 2016).

Memory decline has been measured using both objective and subjective criteria, which is why percentages range from 35% to 75% in indicating the number of people of 60 years and over who either classify themselves as suffering from memory loss or have undergone objective memory tests which concluded that their memory had declined (McEntee & Larrabee, 2000).

However, different memory systems are affected in different ways and to varying degrees. Nagaratnam et al. (2016) stated that especially short-term memory (governing memories which last 15 to 30 seconds) is affected by age, and changes in short-term memory are often seen as the earliest indication of age-related cognitive changes. Likewise, episodic memory (long-term memory of events) and prospective memory (long-term memory of future plans) decline, but procedural memory, i.e. the system underlying long-term memories involved in learned skills (e.g. riding a bike), is often affected much less or not at all. Older adults tend to have difficulty in recalling verbal and visual material in comparison to younger people, but semantic memory, i.e. memory for linguistic information, is not affected when information is used and repeated on a regular basis.

Memory-related diseases include dementia and Alzheimer's disease (Hänninen & Soininen, 1997). People who report subjective memory problems might be in the early stages of one of these memory-related ageing disorders, and are often considered an at-risk group. Additionally, many older adults experience mild cognitive impairment, which may often be a precursor to dementia (Nestor et al., 2008).

1.2.1 Brain reserve versus cognitive reserve.

Neurological and cognitive impairment will manifest itself differently in all individuals. One of the reasons for this is related to brain reserve and cognitive reserve. Brain reserve pertains to physical differences between people's brains; it is a quantitative measure of e.g. the number of neurons or synapses in the brain (Stern, 2012). A larger brain, for instance, will result in more brain reserve. The higher one's brain reserve, the more brain pathology can occur before someone begins to experience functional impairment. Cognitive reserve (CR), on the other hand, refers to ways in which the brain manages brain pathology, e.g. "by using pre-existing cognitive processing approaches or by enlisting compensatory approaches" (Stern, 2012, p. 2). CR can be improved through activities which require such processing techniques; the learning of new skills, for example, may contribute to CR and allow older adults to better cope with brain pathology (Fratiglioni & Wang, 2007). Whereas brain reserve is related to the size of one's brain, cognitive reserve thus pertains to brain function (Stern, 2012).

It finally needs to be pointed out that, although there are ways in which CR can be improved, as highlighted in Section 1.4, the effects of ageing may still have a large impact on not only older adults' physical, but also mental health.

1.3 Mental health in older adults

Depression is quite common among older adults, due to both physical and emotional factors (Runcan, 2013). Physical factors include suffering from chronic diseases or having a more melancholic temper, whereas emotional factors may be related to fear of death, loss of physical abilities, and fear of losing friends or social contacts. Even psycho-social factors, such as unexpected retirement or loneliness, can result in depression. Although mental health services are drastically under-used by older adults, research has found that nearly half of elderly patients suffer from significant depressive and anxiety symptoms (Parkar, 2015).

Furthermore, Markides (2007) reported that only 13% of the population consists of individuals aged 65 and older, but that the population of older adults accounts for 25% of suicides. There is even such a thing as late-life depression, which is only diagnosed in individuals over the age of 65 (McCall & Kintziger, 2013). Thus, as the population of older people is growing rapidly, these numbers are likely to rise, and many researchers have recognised and promoted the importance of mentally healthy older adults (e.g. Abdel-Rahman, 2012; Parkar, 2015; Runcan, 2013).

Depression affects emotional well-being, but also has major effects on physical health. Pathological features of depression include neurodegeneration and impaired neuroprotection, as well as changes in white matter due to vascular impairment and disturbances in neurotransmission (Abdel-Rahman, 2012). Depression is also characterised by hypo-activity in the prefrontal cortex (Fitzgerald et al., 2006), and depression treatment frequently aims to reduce this hypo-activity.

Although most people might only report minor depressive symptoms, these small subjective mood changes can have large consequences (Abdel-Rahman, 2012). Both major and minor depression in older adults often go hand in hand with medical disabilities, mainly because of a higher prevalence of physical illness later in life. Dementia and Alzheimer's patients are more likely to experience symptoms of major depression due to the cognitive decline that those diseases cause. Markides (2007) reported that approximately 20% of early Alzheimer's patients meet the criteria for major depression. It has also been shown that cognitive deficits frequently occur in depressed older patients, more so than in non-depressed older adults, with executive functioning in particular being affected.

In short, finding ways of preventing mental health problems or depression in older adults is crucial. The amount of social support that older adults have is key to healthy ageing (Wang, 2016). Social support can be obtained from interaction with family members, friends,

and organisations. It can take the form of material support and services, but equally important is the subjective social support that includes understanding of the emotional experiences of older adults. Social support has been shown to reduce mental tension and stress (Wang, 2016), and helps older adults manage stressful situations (Fernández Portero & Oliva, 2007).

The size of social networks may also influence mental well-being. A larger network has been associated with a higher degree of well-being: older adults who perceived their social support network as satisfactory and sufficiently large experienced fewer negative emotions and had higher self-confidence and self-esteem (Wang, 2016). Similarly, Chappell and Badger (1989) found the amount of interaction on a daily or weekly basis to be important. They stated that living alone, being unmarried, and having no companions were all related to feelings of unhappiness and lower life satisfaction.

However, a loss of friends and family and thus a decrease in social network size is almost inevitable as people age (Chappell & Badger, 1989; Fernández Portero & Oliva, 2007), which means that not all older adults have direct access to a good support system. Moreover, when people reach the age of 65 to 70, they tend to retire, but this is not always a voluntary decision. Some people are not prepared for this or have attached much value to their work and workplace, which may be their only connection to other people (Runcan, 2013). Retirement from work is seen by many as a retirement from social life too, so people should be encouraged to participate in group activities, become a member of a club or organisation, or even to continue working. This has general advantages, too, for keeping older adults employed may lead to a financially healthier social security system and may aid an individual's involvement in society (Drentea, 2002).

1.4 Preventing cognitive and mental health issues

In order to prevent loneliness, boredom, and potential depression, it can be a good strategy to keep busy and spend time on hobbies and interests (Runcan, 2013). The learning of a new skill is not only a good strategy to prevent loss of social contacts, but can also prevent the degeneration of cognitive abilities. This is reflected in Activity Theory, first introduced by Havighurst (1953). According to this theory, a withdrawal from society causes decreased social involvement that is typical of old age. However, in order to prevent the negative consequences of social disinvolvement, it is crucial to stay active and keep busy in multiple areas of life. Although physical health is the most important predictor of life satisfaction, researchers have also highlighted the influence of activity level, which includes social activity (e.g. social interaction), physical activity (e.g. exercise), and solitary activity (e.g. time spent on personal hobbies) (Binstock, George, Cutler, Hendricks, & Schulz, 2006; Witter, Okun, Stock, & Haring, 1984).

It should go without saying that exercising the brain and remaining active could at least to some degree slow down, halt, or altogether prevent the degeneration in cognitive abilities in older adulthood. Several cognitive training programmes have been set up and tested; the aforementioned ACTIVE programme, for example, has been linked to a delayed onset of clinical depression (Wolinsky et al., 2009). In small groups of three to four people, patients underwent cognitive training which focused on instrumental activities of daily life, such as using a public transportation schedule and remembering lists and sequences of items. Wolinsky et al. found significant differences in the incidence of suspected clinical depression between the training intervention group and a control group, although the programme did not result in any significant recovery effects. The programme has also been used with patients suffering from dementia, but the interventions did not result in a reduced incidence of dementia after five years (Unverzagt et al., 2012). The researchers suggested that this was

likely due to the short duration of the interventions, but also stated that a more varied approach to cognitive training, i.e. including activities and tests that would target several cognitive domains simultaneously, would presumably have a larger effect.

Park et al. (2014), for instance, found that actively participating in the learning of new productive skills (e.g. photography and digital editing, or sewing) resulted in significant improvements in older adults' episodic memory. Receptive activities (e.g. field trips, social interaction, or listening to music), on the other hand, did not result in cognitive improvements. However, the authors did not study whether social interaction also exerted an influence on mental well-being, which might have led to interesting results.

Park et al. (2014) have not been the only researchers to associate the learning of a new skill with advanced cognition in seniors. Antoniou et al. (2013) listed numerous cognitive treatments and therapies aimed at older adults and concluded that the more complex a newly learned skill is, the greater its benefits in older adulthood will be. Antoniou et al. then extended this by pointing to learning a new language as a highly complex skill that has been associated with enhanced cognitive functioning before. To date, cognitive effects of such foreign language training schemes in later adulthood have not been investigated, but evidence about lifelong bilingualism is widely available. Grant et al. (2014) stated that being proficient in two or more languages has long-term cognitive benefits: not only do bilinguals show enhanced cognitive control in comparison to monolinguals, they are also better at tasks which involve switching and inhibition and display greater mental flexibility.

Interestingly, studies have linked bilingualism with different or less activity in the prefrontal cortex. Whereas monolinguals use the right inferior frontal cortex in executive processing, which is the "classical" area associated with executive control (Costumero, Rodríguez-Pujadas, Fuentes-Claramonte, & Ávila, 2015), bilinguals use the left inferior frontal gyrus, which has been linked by e.g. Garbin et al. (2010) to a better ability to process

stimuli and subsequently a better performance in conflict monitoring tasks (see the following paragraph). This enhanced cognitive control enables bilinguals to continuously select, inhibit, and switch between languages.

Enhanced cognitive control and executive processing in bilinguals have been shown by cognitive tests such as the Stroop task and the Simon task, both conflict monitoring tasks which are generally believed to tap mental flexibility (Grant et al., 2014). The Stroop task measures conflict effects by displaying colour terms (e.g. 'red') in other colours (e.g. black) and asking participants to respond to the colour rather than the orthographic word. The Simon task measures conflict effects and exists in several forms. The task might, for instance, present arrows or coloured blocks on either the left or the right side of the screen, and it is believed that more conflict effects are found when e.g. a left arrow is presented on the right side of the screen. Bilinguals have been shown to produce smaller conflict effects on both the Stroop task (Bialystok, Klein, Craik, & Viswanathan, 2004) and the Simon task (Coderre, Van Heuven, & Conklin, 2013).

Antoniou, Gunasekera, and Wong (2013) thus hypothesised that learning a new language in older adulthood can improve mental flexibility and, by consequence, performance on such conflict monitoring tasks. They postulated that foreign language learning is sufficiently cognitively challenging and that it will activate a brain network which in turn will enhance cognitive reserve. This is underscored by Grant et al. (2014), who stated that bilinguals are less likely to develop neurodegenerative diseases such as the previously discussed Alzheimer's disease: they show delayed onset of symptoms of cognitive decline with an average of four to four and a half years. The ageing bilingual brain has been found to show "considerable malleability" (Grant et al., 2014, p. 2) when an individual learns a new language. It is a widespread belief that only children can successfully acquire a second language, but research has shown that even when a foreign language is learned in adulthood it

still has cognitive advantages that could result in a delayed onset of cognitive decline (Abutalebi et al., 2015; Grant et al., 2014), although this has not yet been tested with older adults.

Researchers have often explained the bilingual cognitive advantage by relating it to the fact that bilinguals must constantly monitor two language systems that are both active, so as to prevent intrusions from the language that is not in use (Bialystok, Craik, & Ryan, 2006). Executive functions involve all “complex cognitive processes that serve ongoing, goal-directed behaviors” (Meltzer, 2007, p. 1). For language, the most important cognitive functions are working memory (Mackey & Sachs, 2012; Soliman, 2014), inhibitory control, and task switching (Marian & Shook, 2012). Working memory as a cognitive function temporarily stores information, including linguistic input, while processing new incoming information. As such, it is a limited resources system where the processing and storage component are constantly in competition (cf. Baddeley, 2007). Inhibitory control refers to “[t]he ability to ignore competing perceptual information and focus on the relevant aspects of the input” (Marian & Shook, 2012, p. 5). Task switching pertains to “controlled shifting of mental sets” (Prior & MacWhinney, 2010, p. 254), which, for bilinguals, is reflected in constantly having to decide when and how to switch between languages. Bilinguals have been found to outperform monolinguals on working memory (cf. Soliman, 2014), as well as tasks which require inhibitory control (cf. Blumenfeld & Marian, 2011), and tests which test task switching (cf. Bak, Long, Vega-Mendoza, & Sorace, 2016; Prior & MacWhinney, 2010).

Whereas studies on bilingual advantages have largely been conducted with adults under 65, these advantages extend to older adults as well. Luk et al. (2011) found that white matter in the brain was maintained better in older bilinguals than in older monolinguals, which resulted in enhanced executive functioning. Bialystok, Craik, and Ryan (2006), likewise, found enhanced inhibitory control for bilinguals in comparison to monolinguals.

This difference was particularly great in the group of older adults, which is understandable, since bilinguals' greater cognitive reserve may prevent or slow down cognitive decline in old age.

1.5 Critical Period Hypothesis

However, learning a new language in later adulthood is not always viewed favourably. There has been much research on the determinants of success in L2 acquisition, and especially age of acquisition has been examined extensively for decades. Lenneberg's (1967) Critical Period Hypothesis (CPH) has been very influential in this respect. It presumes that there are critical periods for different domains of language learning, and if learners start learning a language after such critical periods (usually the onset of puberty for language learning in general, which is when the brain is presumed to lose its plasticity), it becomes much more difficult to reach native-like proficiency (Singleton, 2005). However, proponents of the CPH often differ in their definition of the critical period. Newport (1990), for example, focused on working memory and stated that adults, who have longer working memory spans than children, take in too much of the foreign language at once, which hinders their language learning process as opposed to children, who can therefore learn foreign languages more easily. Some proponents of the CPH propose quite radical cut-off points: according to Molfese (1977), for instance, the critical period for acquiring phonology ends when children are one year old.

It is exactly this non-consensus on the CPH which makes the CPH difficult to prove or disprove. Still, despite the many different theories, there does tend to be a general consensus that the age at which learners start acquiring a language is related to the degree of proficiency they will eventually be able to reach (Ramírez-Gómez, 2016). Paradis (2009) suggested an optimal period for language learning, rather than a critical period. Paradis defined this as "the period during which individuals must be exposed to language interaction if they are to acquire

linguistic competence” (p. 114). He distinguished between implicit (procedural) and explicit (declarative) knowledge: implicit knowledge involves automatic processing in which items are stored in and retrieved from memory simultaneously, whereas explicit knowledge involves rule-based processing in which the brain can only focus on one task at a time. Although this is not uniformly accepted as a universal truth, Paradis postulated that until children are two to five years old, they are able to acquire a language implicitly, which will result in native-like proficiency. After this optimal period, language is learned explicitly, which will result in declarative knowledge, which in turn makes it much more difficult for language learners to reach a native-like level.

With regard to the impact the work on critical periods for language learning has had on society, it is likely that no matter how it is phrased, the concept of a critical period has greatly affected both older adults’ own beliefs about foreign language learning. Few older adults deign to learn a foreign language, and studies on older adults’ foreign language learning are limited and few in number (Ramírez-Gómez, 2016). In fact, Ramírez-Gómez has stated that there is a general assumption that “older learners are not interested in achieving a high [foreign language] level” (p. 27). Furthermore, Andrew (2012) investigated the effects of society’s beliefs on older adults’ language learning, and found that the fact that society believes that older adults are experiencing cognitive decline has a negative effect on older adults’ self-esteem. Because of this, older adults often feel less confident in the language classroom, especially when it is shared with younger learners, but even when all learners in their class are approximately the same age.

1.6 Older adults’ personal beliefs about language learning

Apart from society’s views on language learning in older adulthood influencing seniors’ own beliefs, older adults’ previous language learning experiences may also exert an influence on

their beliefs about language learning. Because of these experiences, there likely is a discrepancy between older adults' personal beliefs about language acquisition and current views on language learning based on findings from recent studies (Ramírez-Gómez, 2016).

Most adults who are over 65 years old will have learned a language in the 1960s, and the teaching methodologies in the 1960s will be the ones with which they are familiar. However, current language teaching practices are considerably different from the ones that were used fifty years ago: there is currently a much more substantial focus on communicative language teaching, a learner-centred methodology which aims at developing communicative competence, i.e. the ability to use the language in a variety of everyday situations (Richards, 2006). By contrast, in the 1960s, teaching methodologies were structure-based, centred around teaching grammatical competence, i.e. teaching the language and its underlying grammatical structure, not its communicative uses (Ramírez-Gómez, 2016; Richards, 2006). A popular methodology in the 1960s was, for example, the grammar translation method, which focused on teaching learners morphosyntax and vocabulary through translation exercises, with no focus on teaching learners to use the language for their own purposes in speaking or writing (Lightbown & Spada, 2013; Ramírez-Gómez, 2016). Another popular methodology that many older adults will have previous experience with is the audiolingual method, first used in the army to quickly drill soldiers on using a foreign language. The audiolingual method was still a highly structuralist methodology, but rather than focusing on grammar and translations, it demonstrated its connection to behaviourism by focusing on creating 'habits' in spoken proficiency and pronunciation by having learners memorise and imitate fixed language structures (Lightbown & Spada, 2013; Ramírez-Gómez, 2016).

Communicative language teaching, a teaching methodology which does not focus on grammatical structure, but rather on learners' communicative needs, emerged in the late 1970s and only truly gained popularity in the 1990s (Richards, 2006). Many older adults who

learned a foreign language in school will therefore most likely not be familiar with non-structure-based teaching methodologies. Due to the heavy focus on structure of both the grammar translation method and the audiolingual method, older adults interested in learning a new language tend to have a preference for learning and analysing grammatical structures (Gómez Bedoya, 2008; Ramírez-Gómez, 2016). This was especially true for Gómez Bedoya's Japanese participants, for 43% indicated that they preferred learning grammar and vocabulary. Additionally, Ramírez-Gómez found that older adults often request lists which they can study, for this is what they are used to. However, at the same time, many older adults who disliked their past grammar-focused language classes nowadays disfavour grammar-focused activities, which emphasises the diversity among older adult language learners. Likewise, non-creative teaching methodologies such as the grammar translation method "may have conditioned older FL learners to adopt a rather detail-focused, text-oriented and perfectionist attitude" to language learning (Ramírez-Gómez, 2016, p. 53), which might hinder them when faced with a communicative methodology with a focus on free speaking and writing.

These beliefs and expectations might mean that older adults could experience some difficulty when learning a language later in life, and this may have contributed to the general idea that older adults can or should no longer learn a new language. However, there have been studies in which language learning by older adults, at an age beyond any proposed version of the CPH, was successful. Lenet et al. (2011) investigated the learning of Latin morphology and syntax by both older (65+) and younger adults (18-21) in a short period of time (two days plus one post-test), and found no learning differences between the older and younger adults, except for the fact that older adults benefitted from less explicit feedback rather than more explicit feedback, whereas this did not matter for younger adults. They concluded that older adults could still learn a new language as long as they were motivated. Their results were confirmed by a later study by Cox and Sanz (2015), who likewise studied the acquisition of

Latin morphosyntax by older and younger adults, and likewise found that both groups showed considerable learning effects, regardless of age.

It has also been shown that while older adults generally experience more difficulty with learning new vocabulary, their learning outcomes are not by definition unsuccessful (Van der Hoeven & De Bot, 2012). Furthermore, Van der Hoeven and De Bot showed that older learners outperform younger learners with regard to relearning old, forgotten words. The authors related this finding to older adults' larger mental lexicons, for in large mental lexicons, the connections between words are more firmly and widely established and it is easier to reactivate words that were once known but have since been forgotten. The larger mental lexicon has also, coincidentally, been claimed to underlie the slower response latencies in older versus younger adults in lexical retrieval tasks (Ramscar, Hendrix, Love, & Baayen, 2014): when one's mental lexicon is larger, it takes longer to inhibit the many competitors that are co-activated.

The studies outlined above have indicated that despite the general belief that older adults' can no longer learn a foreign language due to cognitive decline, they can still successfully acquire (parts of) a language when they are motivated to learn.

1.7 Instruction methods for older adults

In short, speaking a foreign language and engaging the brain in the process of acquiring that language has been shown to be a useful way to enhance memory and executive functions. These effects might even present themselves when people only start studying a language in older adulthood (Antoniou et al., 2013; Grant et al., 2014; Park et al., 2014). However, it is important that language classes match older adults' attitudes towards language learning, as well as their learning needs (De Bot & Makoni, 2005).

Firstly, a questionnaire by Gómez Bedoya (2008) revealed several differences in language learning attitudes between younger and older language learners. Older adults were found to be more motivated and more dedicated than younger adults, and were also reported to be more engaged with the classes. However, despite their increased motivation, older adults do experience changes in their physiology and cognitive functioning, such as decrease of grey and white matter in the brain (Nagaratnam et al., 2016) and memory decline (McEntee & Larrabee, 2000). These changes might affect older adults' language learning with regard to processing and consolidation of new material and should be considered carefully in language courses for older adults. Despite the increased motivation and engagement (Gómez Bedoya, 2008), interviews with Spanish older adults revealed that their levels of motivation are unlikely to be maintained if language courses are not adapted towards older adults as their target audience (Alvarado Cantero, 2008).

For years, there has been a debate on the most successful way to teach a foreign language: implicitly or explicitly (Andringa & Rebuschat, 2015). This is related to the difference between implicit and explicit linguistic knowledge (Paradis, 2009, see also above). Implicit instruction involves teaching a language without giving learners grammatical rules for constructing their own input, whereas explicit instruction means that these metalinguistic rules are taught to learners (Hulstijn, 2005). Hulstijn also stated that implicit instruction is said to lead to implicit, i.e. automatic and subconscious knowledge, and that explicit instruction is presumed to lead to explicit, i.e. conscious and less automatic knowledge.

Over the years, researchers have named various advantages and disadvantages of both types of instruction for foreign language learners: implicit instruction might lead to more automatic and natural knowledge of the language, but to less accuracy, certainly in the earlier learning stages (Spada, 2011). Explicit instruction, on the other hand, might make input more easily processable for learners and might aid them in constructing their own knowledge

(Andringa & Rebuschat, 2015), but will also result in less fluent spoken output by learners due to the creation of explicit knowledge (Spada, 2011).

With regard to instruction methodologies for older adult language learners, some older adults may have a preference for grammar exercises, as mentioned earlier (Gómez Bedoya, 2008; Ramírez-Gómez, 2016). However, Ramírez-Gómez emphasised the considerable variation that likely characterises one group of older adult foreign language learners. They will have experienced different instruction methodologies, with varying rates of success, and, as was discussed previously, these experiences may result in instruction preferences that are not in line with what is currently known about effective language teaching, especially more communicative methodologies. In addition to this, older adults will also experience different effects of ageing and to varying degrees (Peters, 2006), which will likewise affect their instruction preferences.

Gómez Bedoya's (2008) questionnaire results of older learners in a mixed-age classroom revealed that older learners experienced their age as a positive factor with regard to their life experience and knowledge, which helped them maintain a lively conversation. Negative effects of ageing were also reported, however, and older adults indicated that they felt inferior to younger adults with regard to memorising new language items and learning speed. In the analysis of her questionnaire results, Gómez Bedoya suggested placing very limited emphasis on assessment tests, for this may result in anxiety, and, in terms of content, focusing on aspects of life which matter to older adults, and connecting language lessons to real life as much as possible. Furthermore, as emphasised previously, older adults' white and grey matter decreases, and repetition is key to ensuring that they are given fair opportunity to store new information in the brain (Nagaratnam et al., 2016).

With regard to instruction methodologies, then, a communicative way of teaching, in which everything that is taught can be explained as much as possible through real life

examples (Richards, 2006), might be a useful starting point for teaching older language learners. The communicative approach is centred on teaching learners what they need to know in order to be able to communicate in the target language, which is probably the most satisfactory instruction methodology for older adults, since this means that older adults will use the language from the beginning. Richards stated that communicative language teaching contains little explicit instruction. However, due to the structure-based, grammar-focused instruction methodologies they have experienced in the past, some older adult learners may be “rather detail-focused, text-oriented and perfectionist” (Ramírez-Gómez, 2016, p. 53). This is not entirely in line with the communicative approach to language teaching, and in order to prevent frustration with the teaching methodology, it may in that case be useful to also include explicit instruction in the language lessons.

1.8 The present study

To date, still relatively little is known about different groups of older adults’ language backgrounds and language learning preferences. More information on these backgrounds and preferences would contribute to the development of teaching methodologies. Moreover, research to date has not yet shown whether cognitive advantages of bilingualism will also extend to older adults if they start learning a new language in later adulthood, and therefore whether language learning is a useful cognitive intervention programme for healthy ageing. This study thus calls for a two-tiered research project, which will be outlined in detail below.

1.8.1 Study I - Language Learning History Questionnaire.

Since the previous questionnaires and interviews were conducted in the contexts of Spanish (Alvarado Cantero, 2008) and Japanese (Gómez Bedoya, 2008) older adults, it would be interesting to investigate older adults in other contexts. One such context is the Dutch context,

since the Dutch are generally considered strong language learners with high proficiency levels (cf. Education First, 2017). One of the aims of the current study, therefore, is to chart Dutch older adults' views on and preferences for language learning, both at the individual level and for older adults in general. In order to investigate this, Study I will distribute a language learning history questionnaire among Dutch older adults, and the following research questions and accompanying two hypotheses were formulated:

RQ 1: What are Dutch older adults' language backgrounds and language learning preferences?

Hypothesis 1: The majority of older adults will have experienced language teaching methodologies such as the grammar translation method or audiolingual method (Richards, 2006) and are likely to prefer more structure-based language teaching.

RQ 2: What are Dutch older adults' perceptions about learning a language in later adulthood?

Hypothesis 2: Theories such as the CPH will have influenced older adults to believe that new languages can no longer be learned at a later stage in life (Andrew, 2012; Ramírez-Gómez, 2016).

1.8.2 Study II - English Language Course.

Studies have shown that older adults can still learn new languages (Lenet et al., 2011; Van der Hoeven & De Bot, 2012). Furthermore, research has indicated that learning a new skill may contribute to cognitive reserve in older adults (Fratiglioni & Wang, 2007) and can decrease the effects of ageing on the brain (Park et al., 2014). Foreign language acquisition has already been shown to result in cognitive advantages for younger adults (cf. Bak et al., 2016; Grant et

al., 2014; Marian & Shook, 2012), and it has been hypothesised that this will also likely be the case for language learning by older adults (Antoniou et al., 2013).

In younger adults, various advantages of language learning have been found. Research has shown that it is possible for language course participants to demonstrate significant improvements in executive functioning, especially inhibitory control (Sullivan, Janus, Moreno, Astheimer, & Bialystok, 2014) and task switching, the latter even in a period as short as one week (Bak et al., 2016). Improvements in working memory, however, have not previously been shown to happen in such a brief period of time. The current study will investigate the potential cognitive benefits of a language course for older adults, and the following primary research question and hypothesis for Study II are put forward:

RQ 3: Can a brief language course improve older adults' executive functioning?

Hypothesis 3: Participating in a language course in later adulthood will have a beneficial effect on executive functioning: inhibitory control and task switching, subsumed under the header cognitive flexibility, are expected to improve, but working memory is not.

Furthermore, as mentioned earlier, ageing is often accompanied by a diminishing social network and less active social life (Chappell & Badger, 1989; Runcan, 2013). However, studies have shown that keeping active in later adulthood and maintaining social contacts can help prevent depression and increase happiness (Fernández Portero & Oliva, 2007; Wang, 2016). A secondary aim of Study II is therefore to discover if a language course can have beneficial effects on mental and social well-being, for which Research Question 4 and Hypothesis 4 are composed:

RQ 4: Can a ten-day language course, during which participants regularly interact with peers, improve older adults' mental well-being?

Hypothesis 4: Mental well-being will improve, due to the increased social interaction participants will experience.

In the following sections, first the method, results, and discussion for Study I will be presented, which will be followed by the method, results, and discussion for Study II.

2. Methodology Study I

2.1 Participants

For the questionnaire component of the study, participants were recruited via a call for participants in a *Senia* newsletter (Stichting Senia, 2018). *Senia* is a Dutch nation-wide organisation which focuses on providing older adults (mostly >50) with materials to maintain interests and share these with peers. In order to do this, the organisation creates reading groups as well as music listening groups. The newsletter was spread via email and included the link to the online questionnaire. The questionnaire was filled in mostly by people over the age of 65, i.e. the target group for the current study, but some respondents were below that age and were therefore excluded from the analyses. The age criterion was the only selection criterion of this study. The respondents were based all over the Netherlands and had different educational backgrounds. However, given that all participants were members of the organisation, this did result in a somewhat skewed testing population, for most reading group members are educated above average. Moreover, *Senia* offers reading groups which focus solely on foreign literature in the target language, meaning that many members speak several languages in addition to their native language Dutch. The questionnaire was also distributed via Facebook, and gained an additional 15 participants via that route.

The questionnaire was filled in by 102 people total, of which 90 responses could be included in the final analyses due to the age requirement of >65. The mean age of respondents was 71.2, and their ages ranged from 65 to 88. 24.44 % of respondents was male, 75.56% was female. In Figure 1 below, the educational background of respondents is displayed. Generally, respondents were educated above-average: most participants, 79%, had received higher education (Hoger Beroepsonderwijs (HBO) and university).

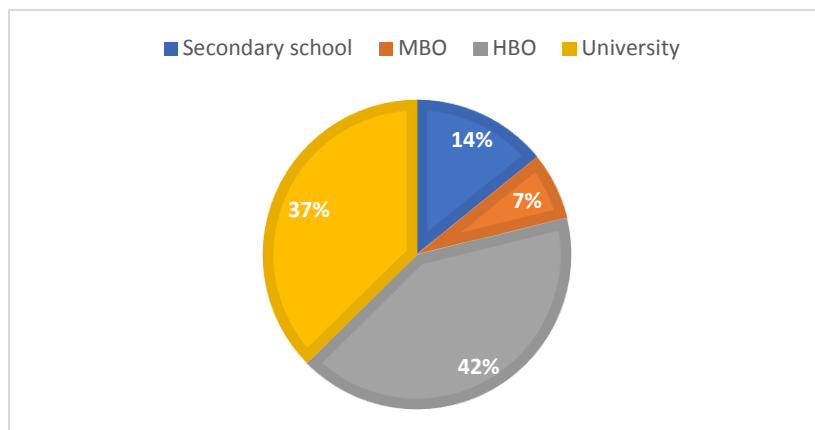


Figure 1. Educational background of the questionnaire respondents.

2.2 Materials

For the first part of this study, a language learning history questionnaire (see Appendix A) was created using Qualtrics (Qualtrics, Provo, UT). The questionnaire consisted of two parts; the first contained relatively generic questions relating to the languages which people had learned and used in their lives. This part of the questionnaire was largely based on parts A and B of Li, Sepanski, and Zhao's (2006) L2 Language History Questionnaire (Version 1.0). The second part of the questionnaire focused more on people's opinions on language teaching methodologies in general and tapped the methodologies with which they had been taught foreign languages in a formal school setting. Furthermore, the respondents' ideas about learning languages in later adulthood were examined as well. These questions were open questions, meaning that each respondent had the opportunity to write down as much as he or she deemed necessary or relevant, so that the data would be as rich as possible.

2.3 Analysis

Due to there being many open questions in the questionnaire, it was necessary to create a system of analysis through which the questions could be categorised. Many of the respondents' answers were comparable, and therefore, for the open questions, answer

categories were created and coded with numbers. For example, for Question 41, “Do you think learning a new language has advantages?”, the categories displayed in Table 1 were established. The full system of analysis can be found in Appendix B.

Table 1

Answer categories for Question 41

1	Yes
2	Yes, communicative advantages
3	Yes, cognitive advantages
4	Yes, personal advantages (e.g. broadening perspectives)
5	No

All data were entered into Microsoft Excel (2016). The full questionnaire dataset can be found on Google Drive (<https://drive.google.com/drive/folders/18L0bRzHK0eLohPLDh7IUaC3K4pL4KO8R?usp=sharing>), but some questions were not included in the results and discussion of the current study. These were questions related to languages spoken in the childhood home, as well as questions which asked for personal information or language learning details which were ultimately not relevant for answering the research questions in the current study (in Appendix A, these are questions 19 and 29 to 32).

3. Results Study I

The results of the language learning history questionnaire were categorised into three subsections: firstly, older adults' language backgrounds; secondly, older adults' views on language learning in later adulthood; and thirdly, older adults' preferences for language learning.

3.1 Older adults' language backgrounds

Considering the questionnaire was distributed in the Netherlands, the mother tongue of the majority of the respondents (92%) was Dutch. The remaining 8% consisted of native speakers of English (6%), German (1%), and Arabic (1%).

Respondents were asked to assess themselves as multilingual or not, and the responses are displayed in Figure 2. The large majority, 74%, did indeed classify themselves as multilingual, which shows that most participants had had some amount of exposure to one or more languages and/or dialects that were not their mother tongue.

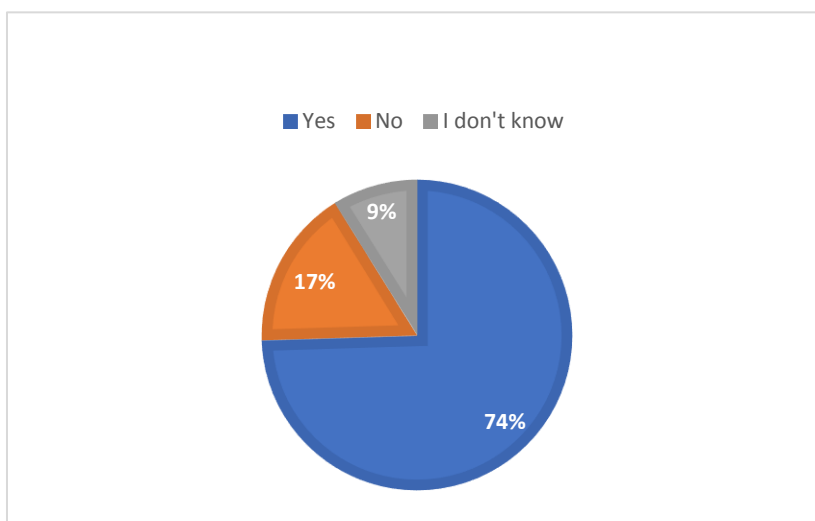


Figure 2. Respondents' answers to the question: "Do you consider yourself multilingual?"

Subsequently, information was gathered about the languages which participants had learned in school and outside of school. In school, 88.9% of the participants had acquired English (average starting age: 12.5). French and German were learned around the same time: 85.6% of the participants had studied French (average starting age: 11.8) and 86.7% of the participants had studied German (average starting age: 12.8).

Outside of school, there was much variation in both the acquired languages and the age of acquisition. Frequently learned languages included Spanish (28.9%) and Italian (16.7%), but over 20 other languages were mentioned by respondents. Likewise, the age of acquisition ranged from 1 to 75.

Respondents were also asked which language teaching methodology they had experienced in school (see Figure 3 below). As was expected, most older adults were taught through the methodology that was common in the sixties, the grammar translation method. The audiolingual method, furthermore, was for no respondent the main language teaching methodology, but some respondents had learned languages through a combination of the grammar translation method and the audiolingual method. Communicative language teaching was not extensively in use 50-60 years ago: a mere 5% of respondents were taught languages solely through this methodology.

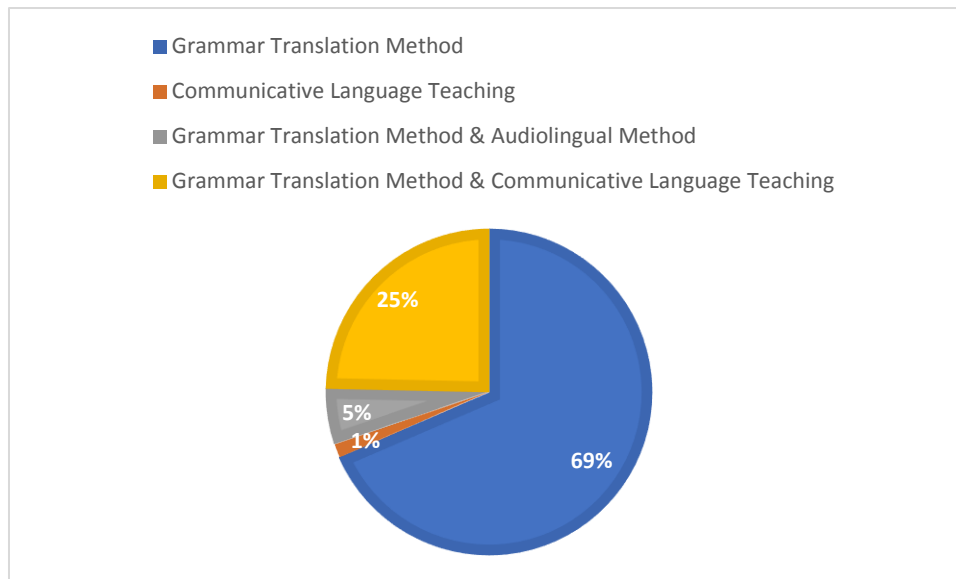


Figure 3. Respondents' answers to the question: "How were languages taught at school?"

Several respondents who had worked in the field of education noted the changes that had occurred in language teaching methodologies over the years. They emphasised the change from more structure-based methodologies such as the grammar translation method or the audiolingual method to more communicative methodologies. Many other respondents underscored this by stating that in language courses later in life, they had experienced a more communicative teaching methodology that contrasted strongly with the grammar translation method with which many of them were familiar.

3.2 Older adults' views on language learning in later adulthood

The next part of the questionnaire asked for respondents' opinions on learning a language later in life. To the question "Do you think learning a new language is age-related?" the vast majority of people (83.3%) replied, "yes, the younger, the better" (see Figure 4). A mere 2.6% thought that older people would more easily learn a new language, and 14.1% indicated that they did not believe age to be a factor in learning a new language, provided that one was motivated.

With regard to language learning in later adulthood, 48.05% said that they believed that older adults are generally incapable of successful language learning. However, when asked whether they thought themselves still capable of learning a language, 75% of respondents answered “yes” to this question. 45.45% of respondents said that older adults are still very much capable, and 6.49% believed that it depended on the individual. According to them, factors such as a ‘knack for languages’ and earlier experience with language learning played a large role in this. Moreover, multiple respondents stressed the importance of motivation, much like they did on the previous question. Some respondents, in relation to the factor of motivation, said that they simply did not have a need for learning a language. They thought they could learn a language if they had to, but at that moment nothing in their lives motivated them to do so.

Furthermore, most respondents recognised that learning a new language has advantages.

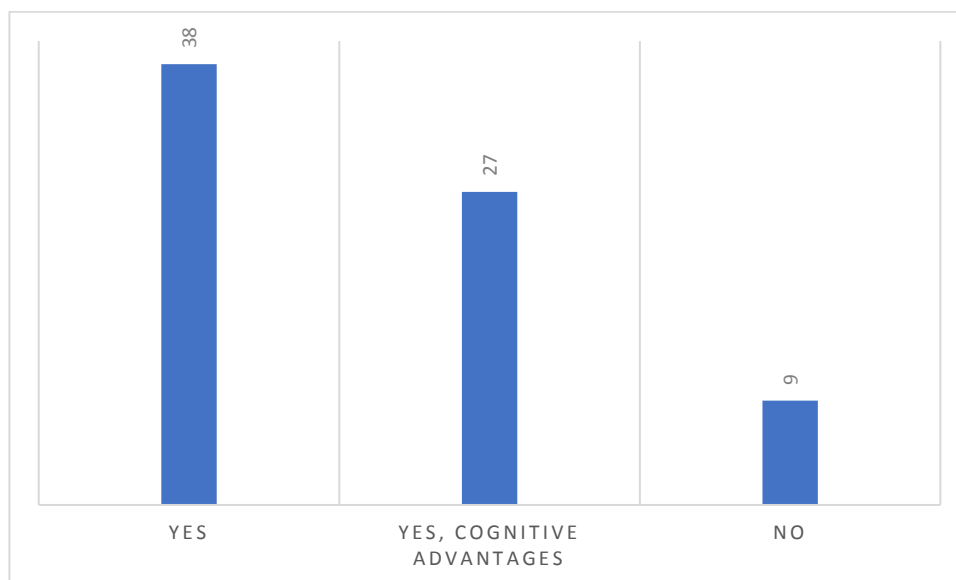


Figure 4. Respondents’ answers to the question: “Do you think learning a new language has advantages?”

If the answers are simply divided into “yes” and “no”, this corresponds with 87.84% and 12.16% respectively, but many respondents also specifically indicated that learning a new language has cognitive advantages. All three categories are displayed in Figure 4. Out of 65 people total who stated that language learning has advantages, 41.54% explicitly mentioned that it improved their brain or at least helped to maintain its health. It should be said that many of those people also mentioned other advantages, such as the convenience of speaking a language when on holiday or when visiting family members abroad, and the broadening of one’s perspective.

3.3 Older adults’ preferences for language learning

The questionnaire revealed that 64.44% of respondents would still be interested in learning a language now. When asked which languages they would like to learn, a great variety of languages were mentioned. The most preferred languages were Spanish (25.7%) and Italian (13.5%), but other popular languages included French (9.5%), Russian (8.1%), and Arabic (6.8%).

When asked to evaluate their past language learning experiences at school, most respondents indicated that they had experienced the grammar translation method as positive (62.2%). Nearly 22% did not look back positively on the methods with which they were taught, and 15.85% classified themselves as being somewhere in-between; they had no preference and mentioned both positive and negative aspects. Negative experiences were often described in terms of “useless,” “boring,” “too difficult,” and even “terrible.” Many respondents used the phrase “I didn’t know any better” in their answers, indicating that they were not necessarily aware of the existence of other methods of instruction.

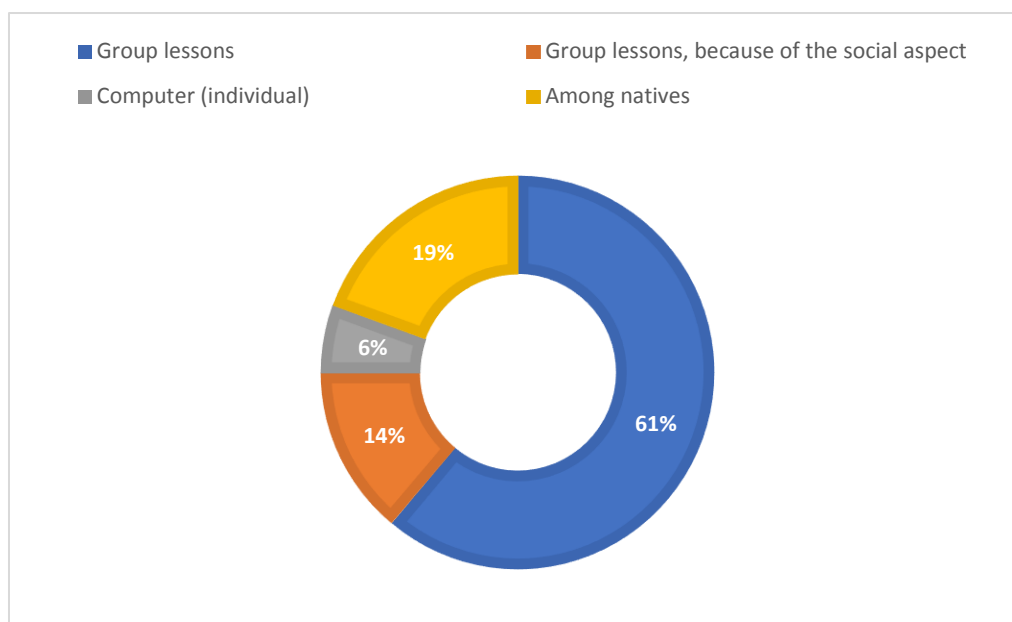


Figure 5. Respondents' answers to the question: "How do you think you would now best learn a new language?"

With regard to foreign language learning preferences, in total, 75% of respondents mentioned group lessons as the preferred learning setting, as is shown above in Figure 5. 61% only mentioned group lessons and often described preferred activities such as learning songs, reading short texts, or listening to speech by natives and having simple conversations, but 14% specifically stated that the social aspect of group lessons (frequently indicated by the Dutch word “gezelligheid”, i.e. cosiness) would majorly contribute to the effectiveness of learning a language. Learning a language among natives was indicated as the preferred method by roughly a fifth of respondents, many of whom indicated that it would be the only method for them which would actually work, as it would force them to use the language. A small proportion of the respondents, 6%, preferred lessons via a computer or any other electronic device, for they believed that this would allow them to practise pronunciation. Besides, some mentioned that they would like to receive some real-life lessons, but would also like to learn through self-study by using an online course or program. However, clearly,

most respondents favoured direct instruction by a language teacher. The teacher, moreover, was often deemed important, for an enthusiastic teacher was often a factor for people in both their enjoyment in learning the language and ultimately their success in acquiring it. Likewise, a teacher with an uninteresting or monotonous approach to language teaching was often reported to be far less successful in both motivating the students and teaching effectively.

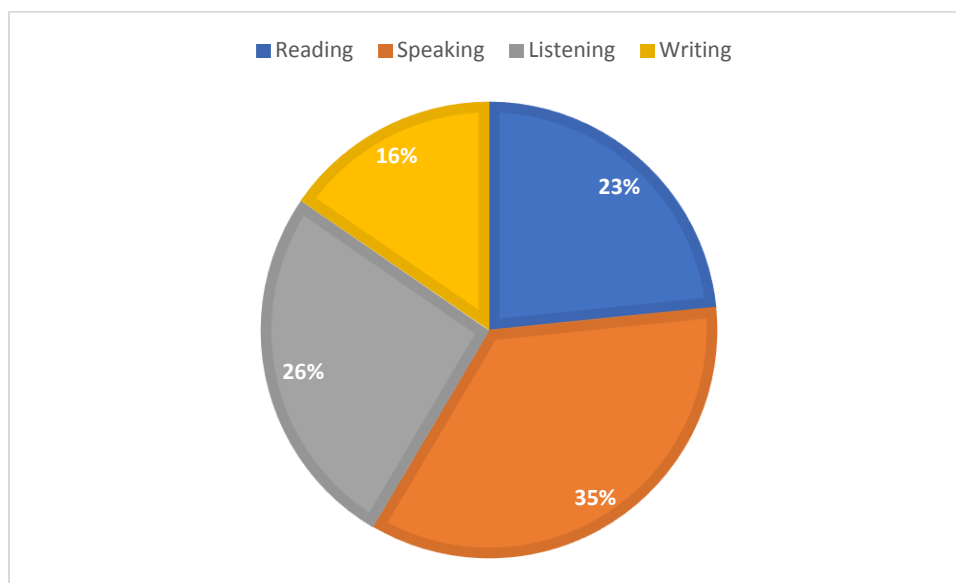


Figure 6. Respondents' answers to the question: "Which aspects of language learning would you like to focus on?"

As is apparent in Figure 6 above, older adults consider speaking (35%) and listening (26%) to be the most important aspects of language learning. Communicative competences are evidently seen as crucially important, and especially writing is not viewed as imperative in a language course. However, nearly a third of respondents indicated that they would like to be taught all aspects of a language, meaning that many people wished to master all main components that make up language proficiency.

4. Discussion Study I

The first research question for Study I was related to the type of foreign language education that Dutch older adults experienced. It was expected that most older adults had been taught through the grammar translation method or the audiolingual method, and barely, if at all, through more communicative teaching methods, which only began to gain popularity in the late 1970s (Lightbown & Spada, 2013; Ramírez-Gómez, 2016; Richards, 2006). The results of the questionnaire did indeed reflect these expectations: Figure 3 shows that a mere 5% of respondents were taught through exclusively communicative methods, as opposed to 95% who were taught through a combination of the grammar translation method, the audiolingual method, and a slightly more communicative method.

With regard to learner attitude, interviews with Spanish (Alvarado Cantero, 2008) and Japanese older adults (Gómez Bedoya, 2008) revealed that motivation is an important factor in foreign language learning, which can also be concluded from the questionnaire results. That is, although many respondents indicated that teaching methodologies such as the grammar translation method were not very interesting, they were still interested in acquiring languages due to personal motivation. In line with previous findings, then, motivation has been revealed to be important for Dutch older adults as well.

The questionnaire also inquired after older adults' learning preferences. The large majority of people stated that they thought learning in a small group, led by an enthusiastic and skilled coach or teacher, would not only be the most effective, but also the most enjoyable methodology. This is not surprising, for Gómez Bedoya's (2008) older Japanese language learners greatly preferred learning in a group setting as well. Gómez Bedoya also stated that testing could be an anxiety-inducing factor for older adults. However, none of the respondents mentioned anything test-related or assessment-related, which might indicate that they did not

attach much value to a formal evaluation of their abilities. In general, for Dutch older adults in the present study, language anxiety did not seem to be a major issue.

Additionally, the social aspect of a small group setting was mentioned by respondents as an advantage. This is in line with previous research relating to social activity in later adulthood, for it has been found that older adults frequently struggle to maintain a tight social network, even though such a network is of crucial importance for them, in terms of both mental and physical health (Wang, 2016). Most respondents did not directly recognise that having a social network is highly important as one grows older, nor did they classify language learning as an activity which could improve their social network, but many did indicate that they would enjoy a group setting and considered this an effective learning environment.

As was discussed previously, due to the structuralist, grammar-focused teaching methodologies which many older adults experienced when they were younger, some older adults might still prefer grammar exercises and learning word lists by heart (Gómez Bedoya, 2008; Ramírez-Gómez, 2016). In fact, 43% of the Japanese older adults in Gómez Bedoya's study indicated a preference for learning vocabulary or grammar. This was, however, not reflected in the responses to the questionnaire. The majority of respondents (61.2%) indicated that they would now be interested in acquiring communicative competence (both listening and speaking) rather than becoming proficient in correctly writing it, and rarely mentioned that explicit grammar instruction would be the best method to reach this aim. That is not to say that not a single respondent liked explicit, grammar-focused instruction, but whenever respondents said that explicit instruction would be useful, they also mentioned that this would only be a part of their preferred method. Only one respondent out of 90 was solely interested in learning how to write a new language, which this person furthermore believed could only be reached through grammar instruction. The other 89 would all rather be taught via a more

communicative approach, which is in line with more modern approaches to language teaching (Richards, 2006), but contrary to previous findings of e.g. Ramírez-Gómez or Gómez Bedoya.

However, some respondents (35.56%) were not interested in learning a new language at all. Here, it is likely that previous learning experiences influenced their beliefs, for several people reported that they were convinced that the old-fashioned method of repeatedly studying vocabulary and lists of grammatical exceptions is still the most effective way of language learning, and they had experienced this negatively. This is in line with the hypothesis that many older adults' might have outdated views about language teaching, as Ramírez-Gómez (2016) suggested.

The second research question for Study I was related to older adults' perceptions about language learning in later adulthood, and it was hypothesised that theories such as the CPH had led many older adults to believe that language learning at a later age would no longer be possible (Hypothesis 2). Furthermore, as Andrew (2012) stated, older adults' self-esteem and estimation of their capabilities is negatively impacted by the general belief held in society that older adults are strongly affected by cognitive decline. This results in older adults being less confident in the language classroom, especially when they are surrounded by younger learners who learn the language much quicker.

This belief was also reflected in the questionnaire, but Hypothesis 2 was found to be only partly true. There appeared to be two roughly equally divided camps, although some respondents (6.49%) stated that it would vary for each individual. 48.05% of respondents said that older adults are incapable of learning a new language, because their brains are simply not as flexible and absorbent as they used to be. However, 45.45% of respondents thought older adults still very much capable of learning a language, provided that they were motivated, put in time and effort, and received instruction tailored to their needs, i.e. slightly slower-paced instruction with more repetition. This is in line with the findings of Gómez-Bedoya (2008)

and Alvarado Cantero (2008), i.e. Japanese and Spanish learner contexts; both studies found that especially the factors of motivation and suitable instruction are crucial in successfully acquiring a new language. It also corroborates the findings of e.g. Lenet et al. (2011), for this study also found that older adults could still learn a language as long as they were motivated to learn.

Many respondents recognised the advantage of being able to communicate with locals while on holiday or to talk to family abroad, but as the results showed, many respondents indicated that language learning has the advantage of keeping one's brain in optimal condition; over 40% of respondents specifically mentioned the cognitive benefits of language learning. This is interesting, for while studies have indeed found that language learning has cognitive benefits (see e.g. Bak et al., 2016; Bialystok et al., 2006; Sullivan et al., 2014), Andrew (2012) reported that many older adults will be affected by ageist notions in society to the extent that they do not believe that learning a new language could still be beneficial. It is noteworthy, therefore, that a considerable number of respondents to the questionnaire was not affected by self-confidence issues as reported by Andrew, and was aware that language learning could have other beneficial effects aside from language proficiency.

These results may, however, not be generalisable for all Dutch older adult language learners. As mentioned before, the vast majority of questionnaire respondents were members of *Senia*, which offers foreign-language reading groups, and thus likely attracts people who are already interested in languages in general or even in language learning. Moreover, the relatively high level of education of the majority of participants could also be explained by this. Therefore, it would be worthwhile to distribute this questionnaire among older adults from more diverse educational backgrounds so as to create a more heterogeneous dataset. Future research, therefore, would benefit from a larger sample size, and, more importantly, a more varied one.

5. Method Study II

5.1 Participants

In the second experimental component of the study, older adults were offered a brief but intensive English course (see Section 5.2 below for more details). For this, participants were selected partly through personal contacts and partly through recruitment among members of a choir. During recruitment, the participants were told that the language course would consist of 10 beginner-level English lessons, focused on speaking, and that this course would be taught as part of a study on cognitive improvement in older adults. Because of this, the participants were informed that they would also be asked to complete a few tests on a pre-test day and a post-test day. Further information on what these tests entailed and what would happen with their data was given to the participants in an informed consent form, which was signed by all participants (see Appendix C). Signing up for the course was voluntary.

All participants lived in the area of Gramsbergen (Overijssel, the Netherlands), where the language course was taught. Most of the participants knew each other or were related and thus already formed part of the same social network, which created a familiar environment in which the course was taught. Nine women and one man participated in the course. The youngest participant was 65 years old and the oldest 84 (mean age: 71.5).

Five participants attended all 10 lessons. Three participants attended nine lessons and two more attended eight lessons; in short, no-one missed more than two lessons. The participants were not paid for their participation, but were provided with refreshments during each lesson. Moreover, they were presented with a small gift and a participation certificate on the post-test day, after they had finished the course, by way of reimbursement.

5.2 Materials

As this study investigated whether a short language course would have a positive influence on participants' cognitive abilities as well as mental well-being levels, an English language course was devised. This course consisted of 10 near-consecutive lessons, due to national holidays and weekends (for the exact dates, see Table 2 below). All 10 lessons were one hour long, as this had previously been shown to be sufficiently long to result in cognitive advantages (Bak et al., 2016).

Table 2

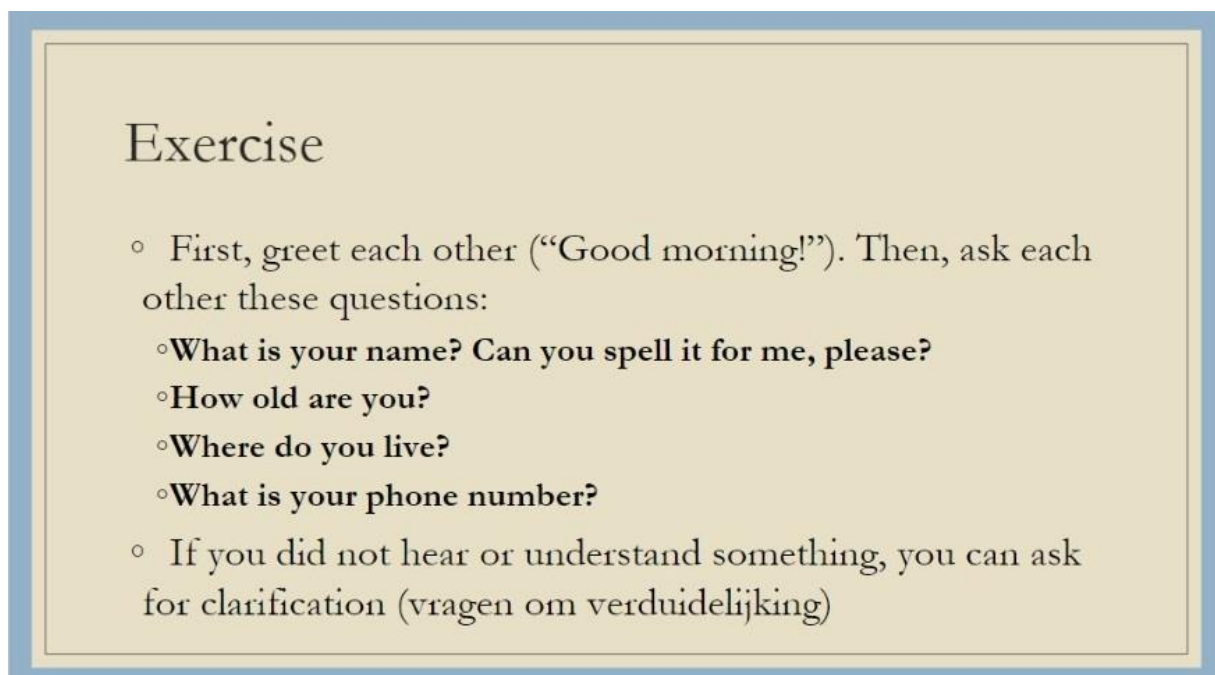
Testing days and lesson topics

Pre-test: Monday 30/04/18	
<i>Lesson</i>	<i>Topic</i>
1 – 01/05/18	Meeting & greeting
2 – 02/05/18	Family
3 – 03/05/18	Time I (days, months, seasons)
4 – 04/05/18	Time II (telling the time)
5 – 07/05/18	Recap lesson 1-4
6 – 08/05/18	Hobbies
7 – 09/05/18	Shopping
8 – 11/05/18	Food & restaurants
9 – 14/05/18	The human body
10 – 15/05/18	Recap lesson 1-10
Post-test: Wednesday 16/05/18	

The course was intended for beginners, for the participants' general starting level was estimated at CEFR's (Council of Europe, 2001) A1 level, based on their self-reports. The course focused mostly on developing communicative competences in English; because of this, a communicative language teaching method was adopted. Since this method aims to teach

communicative competence, i.e. what participants need to know in order to successfully communicate in the foreign language (Richards, 2006), this language course focused on teaching speaking proficiency, for it was estimated that this would be the most useful competence for older adults to learn in a short period of time. This means that the lessons revolved around having short conversations with peers, as well as learning relevant vocabulary and useful phrases and chunks. For example, participants were asked to discuss personal information with each other, as well as with the teacher, who frequently provided brief demonstrations of these conversations to create more authentic input.

During the lessons, PowerPoint presentations (PPTs) were used, which served as the guidelines for each lesson. The PPTs contained vocabulary, useful phrases and sentences, and other relevant information such as images and exercises (all lesson presentations can be found on Google Drive: <https://drive.google.com/drive/folders/18L0bRzHK0eLohPLDh7IUaC3K4pL4KO8R?usp=sharing>). For a sample slide with a speaking exercise, see Figure 7.



The slide is titled "Exercise" and contains a list of instructions for a speaking exercise. The text is as follows:

Exercise

- First, greet each other ("Good morning!"). Then, ask each other these questions:
 - **What is your name? Can you spell it for me, please?**
 - **How old are you?**
 - **Where do you live?**
 - **What is your phone number?**
- If you did not hear or understand something, you can ask for clarification (vragen om verduidelijking)

Figure 7. Sample slide with speaking exercise from Lesson 1: Meeting and greeting.

Each lesson, the participants also received hand-outs (likewise available through the same Google Drive link), which contained both the same phrases as were written on the PPTs, and exercises which were carried out during the lessons and were also sometimes assigned as “homework” that would be discussed at the start of the next lesson. The handouts were created to suit the learning styles of older adults (cf. Ramírez-Gómez, 2016). No additional auditory or visual materials were used to teach the lessons, for it was decided to provide as much face-to-face input as possible, as it was expected that this might be a preference for older adults.

Lessons one to four and six to nine all focused on one topic each (see Table 2 above). Lessons five and ten were used as repetition lessons, in which the previously discussed topics were reviewed and repeated. The course was taught by one of the researchers of the present study. Each lesson began with a recapitulation of the previous lesson, so as to optimise vocabulary retention and consolidation.

The course was taught in a homely environment. Each lesson took place from 10 to 11 each morning, since this best suited the participants. Due to some national holidays, it was impossible to have two blocks of five lessons (Monday through Friday for two weeks). Therefore, there were some days on which no lessons were given, as specified in Table 2 above. The study’s design was set up as a pre-test-post-test design, with an intervention in the form of the English language course. On the pre-test and post-test, the cognitive and mental tests were conducted (see Section 5.2.1). Due to the holidays and the weekends, the course was spread over a period of 15 days. This ensured that the post-tests were not influenced by a priming effect.

5.2.1 Cognitive tests.

As was mentioned in background section 1.4, past studies have found that individuals proficient in more than one language show enhanced executive functioning. Several studies have been carried out to investigate those aspects of executive functioning that are particularly enhanced in bilingual individuals, and it has been robustly shown that mainly the cognitive functions of working memory, inhibitory control, and task switching can be influenced by bilingualism (Bak et al., 2016; Blumenfeld & Marian, 2011; Soliman, 2014). Therefore, for the current study, three cognitive tests tapping these cognitive functions were administered to test the potential cognitive improvement of the participants as a result of their foreign language training. Each test will be briefly described and its suitability to the current study explained. Moreover, the testing procedure for each test will be outlined.

5.2.1.1 Warwick-Edinburgh Mental Well-Being Scale

Participants were asked to fill in a short mental well-being questionnaire, the Warwick-Edinburgh Mental Well-Being Scale (WEMWBS) (Tennant et al., 2007). This took place before or after the cognitive tests were administered, depending on participants' time of arrival. The WEMWBS inquires after positive affect, positive functioning, and personal relationships and was developed to measure the mental well-being of the general population. The scale is generally used to evaluate mental well-being and is frequently applied to "enable self-reflection as a prelude to involvement with health enhancing activities" ("Warwick-Edinburgh Mental Wellbeing Scale (WEMWBS)," 2015), meaning that it was highly relevant to the current study. Participants were asked to respond to 14 statements with regard to their mental state over the past two weeks, choosing from five possible answers ranging from "none of the time" to "all of the time". The questionnaire consisted of statements such as, "I've been feeling good about myself" and "I've been interested in new things". Given that

the participants of the current study did not have a high level of English proficiency, the questionnaire was translated into Dutch. Both the English and Dutch versions of the WEMWBS can be found in Appendix D.

5.2.1.2 Corsi Block-Tapping Task

Following the mental well-being questionnaire, the first cognitive test that was administered in the current study was the Corsi Block-Tapping Task (CBTT). This test was first developed by Milner (1971) and further developed by Corsi (1972), and measures visuo-spatial short-term working memory. It has been used in patients with Alzheimer's disease, schizophrenia, and cerebrovascular disease, among others (e.g. Guariglia, 2007; Hopkins, Kesner, & Goldstein, 1995), but also in healthy individuals (Gangopadhyay, Davidson, Weismer, & Kaushanskaya, 2016). As it is a non-verbal task, it is often administered in children (cf. León, Cimadevilla, & Tascón, 2014), but was also deemed suitable for the senior population in the present study.

The CBTT requires the following procedure: participants are asked to tap small blocks that are fixed in a pseudo-random manner on a square board in a certain sequence of increasing length, starting at two numbers (e.g. 4-7) and ending in at most nine digits (e.g. 5-8-4-10-7-3-1-9-6). The participant is given two attempts to successfully tap the order. Only one order needs to be correct for the participant to be allowed to continue to the next two trials of three numbers. The examiner faces the side of the blocks on which the numbers one to nine are written, and taps the blocks in a fixed order. The subject does not see those numbers, meaning that he or she must rely on the movement pattern that the examiner performs once, before immediately attempting to repeat it. The task stops when participants no longer manage to tap the order correctly on one of the two trials. The most important construct that is measured through this task is the so-called block span, i.e. the last correctly

tapped sequence. After the participant has completed the forward condition of the CBTT, he or she is told that the blocks must now be tapped in reverse order. Thus, the test is normally performed under forward and backward conditions and that same procedure was followed in the present study.

The CBTT has also been used in linguistic research, mainly to test non-verbal working memory (e.g. Gangopadhyay et al., 2016; Veenstra et al., 2016). The CBTT was administered in the current study because it has been found that individuals proficient in more than one language tend to score better on working memory and inhibitory control tasks (Blumenfeld & Marian, 2011; Soliman, 2014), and the present study aimed to test whether a short foreign language intervention would lead to comparable effects. Moreover, the CBTT was selected for its ease of use and its short duration.

5.2.1.3 Flanker task

Directly following the CBTT, a Flanker task was administered. The Flanker task measures response inhibition, i.e. the ability to suppress inappropriate responses in a certain context (cf. Ivanova, Murillo, Montoya, & Gollan, 2016; Litcofsky, Tanner, & Van Hell, 2016). There are several versions of the test, known by labels such as the Eriksen Flanker task (Eriksen & Eriksen, 1974) and the Posner Flanker task (Posner & Petersen, 1990). Traditionally, the Flanker task contains arrows pointing to the left and the right which can be flanked by either congruent or incongruent shapes. The participant is asked to indicate the direction in which the arrow is pointing by pressing a button.

For the current study, a Flanker task containing letter sequences was used (Stoet, 2010, 2017). Each of the 50 trials consisted of a screen which showed a target in the form of the letters C, V, B, or X in the middle of the computer screen, preceded by a fixation cross. This target was surrounded by four so-called noise letters, i.e. letters compatible or incompatible

with the target letter (e.g. CCXCC or VVCVV). The participant was told to only pay attention to the letter in the middle of the sequence. When this letter was an X or a C, the participant had to press the letter A on the keyboard (far-left); when this letter was a B or a V, the participant had to press the letter L (far-right). The noise letters could only be a C, V, B, or X, and it was dependent on which letters accompanied the target letter whether the trial was congruent or incongruent (that is, when only the letter B or V accompanied the target letter B or V, a trial was congruent, but it was incongruent when a C or X accompanied a B or V). The Flanker task measures response inhibition through the difference between reaction times (RTs) in ms to these congruent and incongruent trials, i.e. the flanker effect. Moreover, it also measures accuracy, i.e. if the responses were correct or incorrect.

Although it was a deliberate choice to administer most tests orally and with the use of physical materials, the version of the Flanker task administered in this study is easiest to complete on a computer and can be performed by most people, as they only have to press the A or L button on the keyboard. The test can be found via the following link:

https://www.psychtoolkit.org/experiment-library/experiment_flanker.html.

5.2.1.4 Modified Wisconsin Card Sorting Test

The test protocol concluded with the Modified Wisconsin Card Sorting Test. The neuropsychological Wisconsin Card Sorting Test was devised by Grant and Berg (1948) and was introduced as “a simple objective technique for measuring flexibility in thinking” (Grant & Berg, 1948, p. 15). Sorting tasks have a long-standing tradition in psychological and neuropsychological research, with a task consisting of cards with nonsense words (Ach, 1905) being one of the first. The test was not originally developed for linguistic research, but rather for more general neuropsychological research. It has been used to assess cognitive ability in patients suffering from chronic traumatic brain injury, stroke, and schizophrenia, among

others (e.g. Gooding, Kwapil, & Tallent, 1999; Su, Lin, Kwan, & Guo, 2008), for the test provides insight into frontal lobe dysfunction (Igarashi et al., 2002). The frontal lobe enables inter alia planning, organised searching, and the ability to use feedback. In other words, the WCST measures executive functioning, predominantly in the form of set-shifting and task switching, mental flexibility, and abstract reasoning ability (Kaplan, Şengör, Gürvit, Genç, & Güzeliş, 2006). Within the field of linguistics, the WCST has been used to test the degree of balance in bilinguals in relation to executive functioning (e.g. Vega & Fernandez, 2011).

The test contains cards with four different symbols (squares, pluses, stars, and circles) in four different colours (blue, green, red, and yellow). Each card contains one to four symbols of the same shape and colour. Participants are asked to sort the cards according to a rule that they have to devise themselves; the examiner does not give them any hints or guidelines. After participants have consecutively sorted six cards according to the same rule, the examiner tells them, “The rules have now changed. You have to choose another rule.” When, for instance, the participant has first chosen to sort the cards according to colour, he or she must now sort the cards according to shape or number. When participants have sorted the cards once according to number, once according to shape, and once according to colour, and have consecutively used the same rule for six cards, the participant is told that the rules have changed again, but that they are now allowed to go back to a previously used rule. The objective is to start again with the measure or rule that the participant used first, but the examiner does not inform the participant of this. Therefore, any rule that the participant applies that is not identical to the first one is wrong.

The original WCST consists of 128 sorting cards, but for the current study the modified WCST (M-WCST) (Schretlen, 2010) was selected, which contains 48 sorting cards and four key cards. This ensures a shorter testing time and, consequently, a decreased chance of frustration on behalf of the participant. The M-WCST was specifically designed for senior

populations (Boone, Ghaffarian, Lesser, Hill-Gutierrez, & Berman, 1993). The test can also be performed online, but given that people over the age of 65 frequently prefer to do such tests orally or on paper, it was decided that it would be best to use the paper version of the test.

5.3 Procedure

The administration of all tasks adhered to strict procedures. All participants received the same instructions, but sometimes additional information (as far as the tests allowed it) was provided when the participant asked questions. All tests were explained to the participants in Dutch.

5.3.1 Warwick Edinburgh Mental Well-Being Scale.

The Dutch version of the WEMWBS was administered on paper. This questionnaire took approximately five minutes to complete.

5.3.2 Corsi Block Tapping Task.

First, the board with the tapping blocks was shown to the participant, and simultaneously the test was explained. This included one example of a possible tapping order, which was used to practise the test procedure. When the participant indicated that he or she was ready, the examiner tapped the blocks at the rate of roughly one second per block. The same pace was adhered to for all sequences. For each order, the examiner noted the numbers which were tapped by the participant, so that this could be checked for correctness after the test. The task took approximately 10 minutes to administer per person.

5.3.3 Flanker task.

The Flanker task was conducted on a laptop (HP EliteBook) and participants were sat at a 45 cm distance from the screen. The researcher first explained the test, and then presented the participant with some letter sequences on a sheet of paper so that the participant was familiarised with the procedure. The test was completed in silence and took approximately five minutes to complete per person.

5.3.4 Modified Wisconsin Card Sorting Test.

After the examiner had placed the key cards on the table in front of the participant, the test was explained. This test in particular evoked many questions from the participants, but frequently they were told that their questions could not be answered because they were related to the rules which the participants had to devise. Therefore, the examiner often told the participant that they would simply begin the test, since this would likely answer most questions. During the test, each time the participant sorted a card, this was responded to by indicating correctness in the form of brief remarks, i.e. “Dit is goed” (This is correct) or “Dit is fout” (This is incorrect). Some basic additional guidance was provided whenever necessary, but as little encouragement or information as possible was given so as to not influence the test results. This task took approximately 10 to 15 minutes to administer per person.

5.3.5 Pre-test and post-test days.

All tests were performed in the room where the course was also taught, and each participant was tested individually. On the pre-test day, depending on their time of arrival, participants signed the consent form and filled in the mental well-being questionnaire before or after the tests were administered. On both testing days, the cognitive tests were carried out in the same order for every participant so that conditions were as similar as possible. The CBTT was the

first test, which was then followed by the Flanker task, and the cognitive testing procedure concluded with the M-WCST. All in all, the procedure took roughly half an hour for each participant. The 10 participants were asked to indicate which time slots would be most suitable for them for each testing day, and because of this, the participant order varied on the two days. However, all tests were administered during the day from 9:30 to 17:30. The post-tests were carried out by one researcher (coinciding with the instructor of the language course). The tests needed to be explained again to the participants, for most of them had forgotten what the tests required them to do, which was taken as a sign that testing effects were highly unlikely to occur.

On the post-test day, aside from the aforementioned tasks, the examiner asked each participant some evaluative questions regarding how he or she had experienced the language course. The questions were asked in the form of a semi-structured verbal questionnaire, which can be found in Appendix E.

5.4 Analysis

After the language course and the final testing day, all test results were collected and scored according to the official scoring procedures for each task.

5.4.1 Warwick-Edinburgh Mental Well-Being Scale.

The WEMWBS consisted of 14 statements, each of which was accompanied by a Likert scale from one to five. The participant could obtain a maximum score of 70 points. For each participant, the total score was calculated for both the pre-test and the post-test.

5.4.2 Corsi Block Tapping Task.

For the CBTT, a span score was calculated for each participant, consisting of the longest correctly tapped order. In order to obtain this, all orders which the participants tapped were compared to the original order and marked as correct or incorrect. Participants could reach a maximum span score of nine.

5.4.3 Flanker task.

Since the Flanker task was completed online (Stoet, 2010, 2017), the test automatically calculated participants' scores. This included RTs for each of the 50 trials, as well as mean RTs for congruent and incongruent trials. From this, the computer calculated the Flanker effect scores (obtained by subtracting the respective participant's mean RT on the congruent trials from the mean RT on the incongruent trials). Only the correct responses were taken into account when calculating the mean RTs and Flanker effect scores. Additionally, the number of errors made by the participant was displayed, as well as the number of missed trials, i.e. the trials which were not responded to in time and which had an RT that was longer than 1500 ms. After participants had finished the test, these scores were copied into an Excel file so that statistical analyses could be run.

5.4.4 Modified Wisconsin Card Sorting Test.

For the M-WCST, all of the participants' responses were registered on the M-WCST scoring form. From this, several measures were calculated after the test. The first was the number of completed categories, i.e. each series of six trials for which participants had successfully used the correct rule. Participants could reach a maximum of eight completed categories. The second measure was the total number of errors which participants made, and the third was the number of perseverance errors. An error was a perseverance error when the participant

reverted to the immediately preceding category. That is, if the participant had previously successfully sorted cards according to colour and chose shape as the next category, any return to sorting according to colour was marked as a perseverance error. From the total number of errors and the number of perseverance errors, finally, the percentage of perseverance errors was calculated.

Subsequently, the scored experimental data, acquired through the cognitive tests and the well-being questionnaire, were statistically analysed using the program SPSS (version 24). For all cognitive tests and mental well-being questionnaire separately, paired-samples t-tests were applied separately, with the pre-test and post-test outcomes per test as the dependent variable. A 95% confidence interval was employed, with the alpha level thus being set at .05.

6. Results Study II

6.1 Corsi Block Tapping Task

The CBTT was administered to examine potential improvements in working memory as a result of the language training. Both forward and backward span scores were documented, and the mean scores and standard deviations are presented in Table 3 below, for both the pre-test and post-test.

Table 3

Corsi Block Tapping Task results

		Mean	N	Standard deviation
Forward CBTT (max = 9)	span score pre-test	5,20	10	1,135
	span score post-test	5,00	10	1,054
Backward CBTT (max = 9)	span score pre-test	4,60	10	,843
	span score post-test	4,50	10	,707

As can be seen, the difference between pre-test and post-test performance was minimal. This was confirmed by a paired-samples t-test. No significant differences in span scores were found, for neither the forward nor the backward CBTT:

Forward CBT span: $t(9) = .612$, $p = .555$

Backward CBT span: $t(9) = .246$, $p = .811$

This means that no significant improvements in working memory performance were found for the current group of participants.

6.2 Flanker task

The Flanker task was the second cognitive task administered on both testing days, to examine potential improvements in inhibitory control over the course of the language training. The group scores are presented in Table 4 below, for both the pre-test and post-test. Reported here are response latencies as well as number of errors made. The number of times participants were too slow to respond was also counted and labelled ‘misses’.

Table 4

Flanker task results

		Mean	N	Standard deviation
RT congruent items	pre-test	1028,50	10	190,926
	post-test	934,20	10	138,076
RT incongruent items	pre-test	1024,30	10	176,850
	post-test	927,20	10	113,873
Flanker effect	pre-test	-4,20	10	45,978
	post-test	-7,00	10	37,915
Number of errors	pre-test	5,40	10	4,904
	post-test	1,90	10	1,524
Number of misses	pre-test	4,10	10	5,840
	post-test	2,10	10	3,755

As Table 4 shows, every measure decreased from the pre-test to the post-test: participants responded faster to the Flanker stimuli, both congruent and incongruent (as shown by the decrease in the mean RTs), and they produced fewer errors and missed fewer trials in the

post-test compared to the pre-test. In order to see whether these findings were significant, a series of paired-samples t-tests was administered.

T-tests revealed that the Flanker effect score did not decrease significantly from pre-test to post-test ($t(9) = .152$, $p = .882$), nor did the number of misses ($t(9) = .845$, $p = .420$). With regard to the mean RT for the congruent items, no significant change was uncovered, but the decrease did show a trend: $t(9) = 2.138$, $p = .061$. Another t-test, however, revealed that the participants had become significantly faster at responding to the most difficult Flanker items, the incongruent trials: $t(9) = 2.396$, $p < .05$. Another significant improvement was found in the number of errors, for on the post-test, participants produced significantly fewer errors and were therefore more accurate than on the pre-test: $t(9) = 2.528$, $p < .05$.

The Flanker task, therefore, revealed overall improvements in all measures of inhibitory control after the language course intervention, several of which were significant.

6.3 Modified Wisconsin Card Sorting Test

The M-WCST was the final of the cognitive tasks, administered in order to investigate potential improvements in task switching. The group scores are presented in Table 5 below.

Table 5

M-WCST results

		Mean	N	Standard deviation
Number of categories correct	pre-test	4,30	10	1,567
	post-test	5,00	10	1,054
Total number of errors	pre-test	6,00	10	5,270
	post-test	4,10	10	2,726
Number of perseverance errors	pre-test	12,10	10	5,724
	post-test	9,80	10	3,765
Percentage of perseverance errors	pre-test	,49661	10	,2598
	post-test	,37086	10	,2246

As Table 5 demonstrates, participants also improved on this task, much like on the Flanker task. On the post-test, they reached a higher number of correct categories and produced fewer errors, which is visible in both the number of total errors as well as the number of perseverance errors (and therefore, also in the percentage of perseverance errors in relation to the total number of errors). In order to discover whether these improvements were significant, a series of paired-samples t-tests was administered, none of which yielded significant differences.

Number of categories correct: $t(9) = -1,655$, $p = .132$

Number of perseverance errors: $t(9) = 1,218$, $p = .254$

Total number of errors: $t(9) = 1,243$, $p = .245$

Percentage of perseverance errors: $t(9) = 1,261$, $p = .239$

The t-test results show that none of these findings were significant, although the results did show general tendencies towards better performance on task switching after the language course intervention.

6.4 Warwick-Edinburgh Mental Well-Being Scale

After the cognitive test battery had been administered, participants were asked to complete a mental well-being questionnaire, the WEMWBS (Tennant et al., 2007), in order to investigate whether their self-perceived mental well-being had improved after the 10 days of social interaction during the language course. The calculated mean scores and standard deviations are presented in Table 6.

Table 6

Mental well-being questionnaire results

		Mean	N	Standard deviation
Mental well-being questionnaire score (max = 70)	pre-test	54,70	10	6,848
	post-test	55,50	10	4,378

As demonstrated in Table 6, self-perceived well-being fluctuated somewhat, but almost negligibly so from pre-test to post-test. This was also underscored by a paired-samples t-test, which revealed that the difference was too small to be significant: $t(9) = -.760$, $p = .466$.

6.5 Individual differences

The scores and results as presented above were calculated using the group means, which means that fluctuations in scores (the best and the worst performances) were averaged out.

However, some individual differences were interesting and, subsequently, individual scores and outliers will be discussed. The full tables containing individual results can be found in Appendix F.

The individual CBTT scores did not differ much from each other. The lowest score was 4 and the highest was 7, but performances were relatively comparable on this task. The individual scores for the Flanker task did reveal several outliers. Nearly all participants improved on RT, but for participant 2, these differences were particularly noticeable, for her RT improved by 344 ms for the congruent trials and by 338 ms for the incongruent trials. With regard to number of errors, all participants improved or remained on the same level, but for participant 6, the improvement was especially great, since he produced 18 errors on the pre-test and merely 3 on the post-test. Likewise, all participants missed fewer responses on the post-test, except for participant 1, who unexpectedly missed more trials. Participant 2 was noticeable here as well, for whereas she produced 20 misses on the pre-test, no trials were missed on the post-test.

With regard to the M-WCST, there were some noticeable individual scores as well. Many participants improved on this task, but for participant 6 the difference between pre-test and post-test was quite evident: his number of correct categories increased from one to four, and his number of perseverance errors decreased from 20 on the pre-test to 7 on the post-test. Finally, the individual scores of the mental well-being questionnaire revealed only one participant whose score increased more than other participants' scores: for participant 7, who also had one of the lowest scores on the pre-test, an improvement of 9 points in self-perceived mental well-being was noted.

In short, although there were some outliers, the participants demonstrated significant improvements on inhibitory control (the Flanker task) and tendencies for improved task switching (the M-WCST), as well as very slight changes in perceived mental well-being (the

WEMWBS). All of these results will be interpreted in the discussion section for Study II (Section 7).

6.6 Course evaluation

Finally, in order to see whether the language course that was offered in this study appealed to older adults or not, a language course evaluation was conducted on the post-test day. The results of this evaluation will not be displayed visually, for they were all qualitative and do not readily lend themselves for visual representations. For the full responses, see Appendix E, but a brief summary of the results will be given here.

All 10 participants indicated to have greatly enjoyed the course, and were very positive in their responses. Grades given to the course (on a 10-point scale) ranged from an 8 to a 9. The course topics were all related to everyday life, and participants indicated that they greatly appreciated this and that these topics were very useful and interesting to them. In fact, many participants stated that lessons could have been slightly longer than one hour. In order to make the language course as communicative as possible, the focus of the course was on spoken English, since this group of older adults was unlikely to need writing proficiency. Indeed, in the course evaluation, all participants indicated that they liked the teaching methodology that was used, and one participant even specifically stated that she liked the focus on speaking rather than writing proficiency.

There were other aspects of the adopted teaching methodology for the current course that were experienced very positively, such as the level of the lessons, which participants stated was very well-suited for beginners. Moreover, as was explained before, much attention was paid to repetition during each lesson. Lesson five and 10 were solely devoted to repeating and reviewing the learned material, and the other lessons began with a recapitulation of the topics that were discussed the previous day. All participants greatly appreciated the ample

time that was devoted to repetition and indicated that this helped them to consolidate the material. The participants also expressed their appreciation for the materials that were used; the PowerPoints were clear to them, and especially the hand-outs were helpful, for they allowed them to review the materials and vocabulary at home.

However, perhaps the most positive aspect of the course which was highlighted by the evaluation was the small group of peers in which participants were taught, as well as the homely setting in which the course was given. This combination led many participants to describe the course as “fun” and “gezellig” (cosy).

These responses to the language course evaluation will be more thoroughly reviewed in the general discussion (Section 8), when they will be compared to the results of the questionnaire that was distributed in Study I.

7. Discussion Study II

The present study investigated potential cognitive improvements and increases in perceived mental well-being of older adults who participated in a brief, ten-day language course. It was hypothesised that a language course as short as 10 days could result in improvements in executive functioning, for in the past, even a language course of one week has been found to result in cognitive improvements, albeit in a younger population (Bak et al., 2016). Three executive functions were tested and improvements were expected to be found mainly in inhibitory control and task switching, rather than working memory.

The first executive function that was investigated was working memory, with the use of the CBTT. Learning a foreign language and bilingualism have been found to improve working memory in the brain (Soliman, 2014), although never in such a brief period of time. As can be seen in the result section above, there was hardly any difference between the participants' pre-test and post-test scores on the CBTT, and no significant changes were found. It is highly likely, therefore, that working memory is an executive function which requires a longer period of increased cognitive activity (e.g. through language learning) before improvements may be found. This outcome is thus in line with earlier work which needed a longer time trajectory for working memory effects to emerge.

Subsequently, inhibitory control improvements were tapped using the Flanker task. Much like working memory, studies have found that inhibitory control may be enhanced and improved through language learning and bilingualism (cf. Blumenfeld & Marian, 2011; Sullivan et al., 2014). In the present study, although the language course was brief, it was expected that this task might reveal improvements in the participants' inhibitory control. The results indicate that this was indeed the case for the group of participants in this study. They missed fewer trials, produced fewer errors, and responded faster to both congruent and incongruent stimuli. It is not surprising that the decrease in number of misses and RTs to the

congruent items did not prove to be significant, for the group of participants was rather small ($n = 10$). It is, therefore, particularly meaningful that the number of errors and RTs to the incongruent items did decrease significantly. Overall, these findings suggest that inhibitory control may indeed improve with the learning of a new language in later adulthood and that such effects emerge very soon after the onset of the language course.

The final cognitive test that was administered was the M-WCST, to examine changes in task switching. As mentioned in Section 1.4, task switching has likewise been found to improve upon learning a new language and being bilingual (Prior & MacWhinney, 2010), even in Bak et al.'s (2016) language learning experiment with a duration of one week. It was therefore expected that participants might very well improve on the M-WCST, and the task did indeed reveal some interesting findings. Although none of the findings were significant, participants did improve on the task: the number of errors made (total number as well as number of perseverance errors) decreased on the post-test, and they produced more correct categories. The fact that no significance could be found may, once again, be related to the small group size, for Bak et al. did find improvements after only one week with a larger sample size. This means that the brief foreign language course which participants took may indeed result in tendencies for improvement in task switching.

Finally, as mentioned earlier, a secondary aim of this study was to explore whether a period of increased social interaction might improve participants' self-perceived mental well-being. Studies have suggested that an active social life can help prevent depression and may increase happiness (Fernández Portero & Oliva, 2007; Wang, 2016). For the present study, it was hypothesised that 10 days of social interaction might result in improvements in self-perceived well-being. To test this, a mental well-being questionnaire was administered (Tennant et al., 2007), but its results revealed no significant changes. A minute change of 0.8 points towards improved mental well-being was found for the group as a whole, but this was

most likely due to participant 7, whose score increased by nine points. The other participants' scores remained stagnant or increased or decreased by only a few points. This, however, was not as surprising as the literature may suggest, for previous studies all investigated improvements in mental well-being over a longer period of time than 10 sessions.

Furthermore, participants in this study all still had quite active social lives. Many of them were, after all, members of a singing choir which gathered every week, and during the lessons, they all indicated to spend much time with family and friends and overall appeared to live rather busy lives. It is likely that, had all participants spent more time at home, in a more isolated environment, a language course such as this one would have resulted in a larger increase in self-perceived mental well-being.

As was mentioned in the results section (Section 6.5) above, there were a few outliers among the participants' test results. Participants performed quite similarly on the CBTT, but some noticeable results were found for the Flanker task as well as the M-WCST. Participants 2 and 6 improved the most on RT with regard to both congruent and incongruent trials. Participant 6 scored the highest RTs on both the pre-test and the post-test, and his high pre-test RTs may be a reason for the considerable improvement. With regard to participant 2, who also demonstrated remarkable progress on the number of misses, it should be noted that this participant was particularly nervous on the pre-test day. Uncertainty about the tests that were yet to come and insecurity about the language course may have affected her pre-test scores. On the post-test day, she was noticeably more confident and relaxed.

With regard to the M-WCST, it was also participant 6 who demonstrated noticeable progress from pre-test to post-test. As mentioned previously, he produced three additional correct categories on the post-test compared to the pre-test, and the number of perseverance errors he made was reduced by 13. An explanation for this progress cannot be related to the participant's age or nervousness like before, for his age was average in this group of

participants. He did produce the lowest score on the pre-test, so in that sense, there may have been more room for improvement, but on the post-test day, this participant simply appeared to be better at switching between the different possible rules.

Unfortunately, Study II did contain some limitations. First of all, the group of participants of the language course was rather small ($n = 10$), which means that any results found in the current study should be interpreted carefully. As mentioned previously, the mental well-being scores of the participants were high to begin with, for the participants were all still socially active and none of them lived isolated lives, so the sample under investigation was a skewed one. Moreover, the majority of the participants had received musical training due to their weekly choir practice. Musical training has been associated with improved cognitive functioning (Biasutti & Mangiacotti, 2018), and in this sense, therefore, the participant group was not all that varied. Further studies on mental well-being improvements as a result of a language course may benefit from a more varied group of participants.

A more important limitation, however, is related to the design of the study, for Study II lacked a control group. This would have been valuable in comparing the effect of the current language course on cognitive functioning to the effect of a more receptive activity, such as playing board games, or learning a different productive new skill, such as digital photography editing (cf. Park et al., 2014). A further design limitation, as mentioned earlier, is the duration of the study: the present study consisted of merely 10 near-consecutive days of language teaching, and that may have caused, for instance, the lack of results in the CBTT for working memory.

In short, despite the aforementioned limitations, the results of the cognitive tests that were administered in this study did reveal improvements in the participants' inhibitory control and task switching. The participants did not demonstrate any noticeable changes in working memory, however, in general, the cognitive tests that were administered in this study appear

to confirm Bak et al.'s (2016) findings that even a brief language course may result in improvements in executive functioning, particularly in inhibitory control and task switching.

8. General Discussion

A link was found between the questionnaire responses in Study I and the responses to the course evaluation that was conducted in Study II, in the sense that most aspects of the language course were in line with many older adults' preferences for learning a new language. The questionnaire respondents indicated that they would greatly prefer a teaching methodology that would focus on developing communicative competences, which made the communicative teaching methodology that was adopted in the language course very suitable. Indeed, the course evaluation revealed that the participants enjoyed the focus on communication in the target language.

Similarly, the questionnaire respondents indicated a preference for learning in a small group, and highlighted the importance of the social aspect of a language course. This was underscored by Study II participants' appreciation of the homely learning environment and small group of peers in which the language course was taught. The language course participants also stated that they valued the repetition of material, indicating that this helped them consolidate the phrases and chunks. This focus on repetition was also mentioned by the questionnaire respondents, who stated that repetition was necessary for language teaching methodologies aimed at older adults.

These positive aspects have important implications for the field of foreign language teaching for older adults. A greater focus on communicative competences, preferably in a small, cosy group setting among peers, with sufficient repetition, appears to be crucial for a positive language learning experience by older adults. Further implications for foreign language teaching for older adults come in the form of suggested improvements by both questionnaire respondents and language course participants. The inclusion of more authentic (i.e. native) teaching materials was an important suggestion in terms of effective learning strategies, as well as a more varied array of materials, including songs, poems, short stories,

and games. However, as the course participants indicated, the PowerPoint presentations and hand-outs used in the current study were also greatly appreciated. In terms of duration of the lessons, a preference was given for 1.5-hour classes led by a skilled coach or teacher.

With regard to the results of the cognitive tests administered in Study II, tendencies were found for cognitive improvement, which has important implications for the fields of bilingualism and healthy ageing. That is, learning a foreign language may result in cognitive advantages even when one only starts learning a new language in later adulthood, and appears to be a promising way of preventing cognitive decline. As was mentioned earlier, several cognitive training programmes have already been established to prevent cognitive decline in older adults (Ball et al., 2002; De Souto Barreto et al., 2017). However, these programmes are rather focused on merely enhancing cognitive functioning through isolated cognitive exercises, and it might be worthwhile to employ language learning as a preventative method which combines the training of several cognitive functions with the learning of a useful communicative skill. Additionally, a language course also involves social interaction, which has been demonstrated to be important in maintaining mental health in later adulthood (Fernández Portero & Oliva, 2007; Wang, 2016). Although no significant improvements of mental well-being were found for the current study, the great appreciation for the social environment of the language course might suggest that a longer language course would generate different results.

9. Conclusion

As has become evident from the previous sections, this study had several aims: firstly, to discover Dutch older adults' language backgrounds, as well as their views on and preferences for language learning (Study I), and secondly, to examine whether a brief language course could improve older adults' cognitive functioning as well as their mental well-being (Study II).

For Study I, it was expected that many older adults' views on and preferences for language learning would reflect the foreign language learning attitude that was prevalent in the 1960s, i.e. grammar-focused, correction-oriented views connected to the grammar translation method or the audiolingual method (Hypothesis 1). It was also expected that theories such as the CPH might have led them to believe that language learning was no longer possible in later adulthood (Hypothesis 2). However, the results of the questionnaire distributed in Study I revealed that this was by no means the case for all older adults. In fact, although many older adults had indeed experienced the grammar translation method in their language learning, as expected, many of them indicated that they believed that a more communicative teaching methodology would be more effective. Likewise, while many questionnaire respondents did indicate that learning a language at a young age would be best, the majority believed that they themselves were still capable of learning a new language, contrary to Hypothesis 2. Many respondents also stated that language learning might have cognitive benefits, which means that the respondents were more aware of foreign language learning benefits than expected.

For Study II, it was expected that cognitive improvements would occur, particularly in inhibitory control and task switching, since these had been found for younger adults in previous studies (Bak et al., 2016; Sullivan et al., 2014), but that any improvement would be small (Hypothesis 3). As the results showed, improvements were found for both inhibitory

control and task switching; the benefits for the latter were indeed small, but the participants showed significant progress for inhibitory control, which was remarkable, considering the small group size. No noteworthy improvements for working memory were found, nor for mental well-being, which was expected to improve (Hypothesis 4). However, this may have been due to the duration of the study for working memory and the participants' active social lives for mental well-being.

In short, the results of this study are promising, but it would be worthwhile to replicate this study over a longer period of time, with a more varied group of participants who have not received musical training. A control group would also help establish and confirm the findings of the present study. Both a control group which participates in receptive activities (e.g. playing board games) and one which participates in the learning of a more productive skill (e.g. digital photography editing) would be useful, for these would allow for making a distinction between the effects of cognitive training (the language course) and the effects of non-cognitive training (receptive activities). Moreover, the unique effects of language learning could then be identified, for the cognitive effects of language training could be compared to the effects of learning another productive skill.

However, the fact that even a small-scale study such as the present one found noteworthy results is interesting, and, since few studies have investigated this area of healthy ageing, future research may explore the benefits of language learning even further. Unfortunately, the physical ageing process cannot yet be stopped, but learning a new language could potentially bring people just that little bit closer to being *Forever Young*.

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Appendices

Appendix A: Language Learning History Questionnaire

Start of Block: Deel A + B

Q1 Wat is uw leeftijd?

Q2 Wat is uw geslacht?

☐ Man (1)

☐ Vrouw (2)

☐ Anders (3)

Q3 Wat is uw hoogst afgeronde opleiding?

Q4 Wat is uw land van herkomst?

☐ Nederland (1)

☐ Anders, namelijk (2) _____

Q5 Wat is uw moedertaal?

Q6 Beschouwt u zichzelf als meertalig? (Wij zien meertaligen als mensen die meer dan één taal goed beheersen. Deze talen mogen zowel standaardtalen als dialecten zijn.)

- ☐ Ja (1)
- ☐ Nee (2)
- ☐ Weet ik niet (3)
-

Q7 Welke taal/talen heeft u op school geleerd? (Gelieve hier één taal in te vullen; indien u meer talen op school geleerd heeft, zult u per taal de gelegenheid krijgen de vraag in te vullen.)

- ☐ Taal: (1) _____
- ☐ Niet van toepassing: ik heb geen talen op school geleerd (2)

Skip To: Q17 If Welke taal/talen heeft u op school geleerd? (Gelieve hier één taal in te vullen; indien u meer ta... = Niet van toepassing: ik heb geen talen op school geleerd

Q8 Hoe oud was u toen u deze taal begon te leren?

Q9 Heeft u nog een taal op school geleerd?

- ☐ Ja, namelijk (slechts één taal invullen): (1)

- ☐ Nee (2)

Skip To: Q17 If Heeft u nog een taal op school geleerd? = Nee

Q10 Hoe oud was u toen u deze taal begon te leren?

Q11 Heeft u nog een taal op school geleerd?

☐ Ja, namelijk (slechts één taal invullen): (1)

☐ Nee (2)

Skip To: Q17 If Heeft u nog een taal op school geleerd? = Nee

Q12 Hoe oud was u toen u deze taal begon te leren?

Q13 Heeft u nog een taal op school geleerd?

☐ Ja, namelijk (slechts één taal invullen): (1)

☐ Nee (2)

Skip To: Q17 If Heeft u nog een taal op school geleerd? = Nee

Q14 Hoe oud was u toen u deze taal begon te leren?

Q15 Heeft u nog een taal op school geleerd?

☐ Ja, namelijk (slechts één taal invullen): (1)

☐ Nee (2)

Skip To: Q17 If Heeft u nog een taal op school geleerd? = Nee

Q16 Hoe oud was u toen u deze taal begon te leren?

Q17 Welke taal/welk dialect heeft u buiten school geleerd? (Gelieve hier één taal in te vullen; indien u meer talen buiten school geleerd heeft, zult u per taal de gelegenheid krijgen de vraag in te vullen.)

☐ Taal/dialect: (1) _____

☐ Niet van toepassing: ik heb geen talen/dialecten buiten school geleerd (2)

Skip To: Q29 If Welke taal/welk dialect heeft u buiten school geleerd? (Gelieve hier één taal in te vullen; indie... = Niet van toepassing: ik heb geen talen/dialecten buiten school geleerd

Q18 Hoe oud was u toen u deze taal / dit dialect begon te leren?

Q19 Waar heeft u deze taal / dit dialect geleerd? (bijv. op het werk)

Q20 Heeft u nog een taal of dialect buiten school geleerd?

☐ Ja, namelijk (één taal/dialect invullen): (1)

☐ Nee (2)

Skip To: Q29 If Heeft u nog een taal of dialect buiten school geleerd? = Nee

Q21 Hoe oud was u toen u deze taal / dit dialect begon te leren?

Q22 Waar heeft u deze taal / dit dialect geleerd? (bijv. op het werk)

Q23 Heeft u nog een taal of dialect buiten school geleerd?

☐ Ja, namelijk (één taal/dialect invullen): (1)

☐ Nee (2)

Skip To: Q29 If Heeft u nog een taal of dialect buiten school geleerd? = Nee

Q24 Hoe oud was u toen u deze taal / dit dialect begon te leren?

Q25 Waar heeft u deze taal / dit dialect geleerd? (bijv. op het werk)

Q26 Heeft u nog een taal of dialect buiten school geleerd?

☐ Ja, namelijk (één taal/dialect invullen): (1)

☐ Nee (2)

Skip To: Q29 If Heeft u nog een taal of dialect buiten school geleerd? = Nee

Q27 Hoe oud was u toen u deze taal / dit dialect begon te leren?

Q28 Waar heeft u deze taal / dit dialect geleerd? (bijv. op het werk)

Q29 Welke taal / welk dialect sprak u vroeger meestal thuis met uw moeder?

- ☐ Taal/dialect: (1) _____
- ☐ Niet van toepassing (2)

Q30 Welke taal / welk dialect sprak u vroeger meestal thuis met uw vader?

- ☐ Taal/dialect: (1) _____
- ☐ Niet van toepassing (2)

Q31 Welke taal / welk dialect spraken uw ouders vroeger meestal met elkaar?

- ☐ Taal/dialect: (1) _____
- ☐ Niet van toepassing (2)

Q32 Kruis alstublieft de schoolniveaus aan die u gevolgd heeft en vul de talen in waarin u op dat niveau les hebt gehad.

☐ Basisschool/lagere school: (1)

☐ Middelbare school (vanaf 12 jaar): (2)

☐ Vervolgonderwijs (bijv. beroeps- of hoger onderwijs): (3)

☐ Overige cursussen: (4) _____

☐ Niet van toepassing (ik heb nooit onderwijs gevolgd) (5)

Q33 Hoe werd er op school taalles gegeven en verschilde dat wellicht per taal? Kunt u die methode(s) zo goed mogelijk omschrijven?

☐ Omschrijving van methodes: (1)

☐ Niet van toepassing (2)

Skip To: Q35 If Hoe werd er op school taalles gegeven en verschilde dat wellicht per taal? Kunt u die methode(s)... = Niet van toepassing

Q34 Hoe heeft u deze methode(s) ervaren? (bijv. interessant, leerzaam, zinloos, moeilijk...)

Q35 Als u aanvullende informatie heeft over uw taalachtergrond of taalgebruik die volgens u interessant of belangrijk is, vul deze dan alstublieft hieronder in.

End of Block: Deel A + B

Start of Block: DEEL C

Q36 Zou u nu geïnteresseerd zijn in het leren van een nieuwe taal?

- ☐ Ja (1)
- ☐ Nee (2)

Skip To: Q38 If Zou u nu geïnteresseerd zijn in het leren van een nieuwe taal? = Nee

Q37 Als u nu de kans zou krijgen om een nieuwe taal te leren, aan welke taal zou u dan de voorkeur geven? Als het er meerdere zijn, geef dan een top 2 of 3.

- ☐ Taal/talen (top 2 of 3): (1)
-
- ☐ Niet van toepassing (2)

Q38 Denkt u dat het leren van een taal leeftijdsgebonden is? Is er bijvoorbeeld een leeftijd waarop mensen volgens u het gemakkelijkst een nieuwe taal leren?

Q39 Denkt u dat 65+'ers gemakkelijk een nieuwe taal kunnen leren?

☐ Ja, omdat: (1) _____

☐ Nee, omdat: (2) _____

Q40 Denkt u dat u zelf nog steeds in staat bent om een nieuwe taal te leren?

☐ Ja, omdat: (1) _____

☐ Nee, omdat: (2) _____

Q41 Denkt u dat het leren van een nieuwe taal voordelen heeft? Zo ja, welke?

Q42 Op welke manier denkt u dat u nu het best een nieuwe taal zou leren? Kunt u die manier zo goed mogelijk omschrijven?

Q43 Als u nu een taalcursus zou volgen, waaraan zou u dan de meeste aandacht willen besteden tijdens de lessen (bijv. lezen, luisteren, spreken, schrijven)?

Q44 Hartelijk bedankt voor het invullen van deze vragenlijst! Dit helpt ons zeer bij ons onderzoek. Wij zijn Marith Assen en Rhomé Busstra, twee studentes aan de Rijksuniversiteit Groningen. Voor ons afstudeerproject doen wij een onderzoek naar hoe 65+'ers een nieuwe taal leren. Uw antwoorden zijn daarom erg waardevol. Voor een vervolgonderzoek werken we aan het ontwikkelen van een geschikte lesmethode voor 65+'ers. Hiervoor zijn we op zoek naar mensen die ons kunnen helpen door deel te nemen aan een aantal gratis basislessen Spaans in de stad Groningen (tien dagen, één uur per dag, verspreid over twee weken). Als u geïnteresseerd bent, willen we u graag vragen om uw naam, telefoonnummer en/of e-mailadres in te vullen. We hopen van u te mogen horen!

☐ Ja (naam, telefoonnummer, e-mailadres): (1)

☐ Nee (2)

Q45 Heeft u nog iets toe te voegen aan deze vragenlijst? Indien u vragen heeft, kunt u te allen tijde contact opnemen met ons via het volgende e-mailadres: a.m.assen@student.rug.nl

End of Block: DEEL C

Appendix B: System of Analysis LLHQ

How were languages taught at school?	
1	Writing – school books, exercises, writing assignments
2	Orally – speaking, oral exams, presentations
3	Reading – literature
4	Grammar –grammar translation method, cases, exceptions
5	Translation
6	Vocabulary/idiom
7	Listening

Method	
1	Grammar translation method
2	Audiolingual method
3	Communicative language teaching

How did you experience these method/methods?	
1	Useful, informative, instructional
2	Useless
3	Difficult
4	Easy
5	Fun – interesting, nice, fascinating
6	Not fun – uninteresting, boring

Do you think learning a language is age-related?	
1	Yes, the younger the better/easier
2	No (if one is motivated)
3	Yes, the older the better/easier

Do you think that generally, older adults can easily learn a new language?	
1	Yes, because they have experience/motivation/time
2	Yes, but it is harder than when one is younger, requires more energy
3	No, learning and remembering is harder, concentration levels have decreased
4	Yes, but it is personal (knack for languages or not)

Do you think you personally are still capable of learning a new language?	
1	Yes
2	Yes, because I am motivated and have time
3	Yes, because I love language and find it interesting
4	Yes, to a certain extent
5	No, because I do not have motivation/my brain is not capable of that anymore
6	Yes, but I do not want to

Do you think that learning a new language has advantages?	
1	Yes
2	Yes, communicative advantages
3	Yes, cognitive advantages
4	Yes, personal advantages (e.g. broadening perspectives)
5	No

In what way do you think you would now best learn a new language?	
1	Group lessons (educational books, grammar, songs, dialogue, reading aloud, videos)
2	Computer (with pronunciation)
3	Amongst native speakers
4	In a group, because sociability and a friendly, relaxed environment is important

If you would take a language course now, which aspects of learning a language would you most like to focus on?	
1	Reading
2	Speaking
3	Listening
4	Writing

Appendix C: Informed Consent Form

Ik (naam deelnemer)

.....

stem toe mee te doen aan een onderzoek dat uitgevoerd wordt door Marith Assen en Rhomé Busstra (MA studenten aan de Rijksuniversiteit Groningen).

Ik ben me ervan bewust dat deelname aan dit onderzoek over taal geheel vrijwillig is. Ik kan mijn medewerking op elk tijdstip stopzetten en de gegevens die verkregen zijn uit dit onderzoek terugkrijgen, laten verwijderen uit de database, of laten vernietigen.

De volgende punten zijn aan mij uitgelegd:

1. Het doel van dit onderzoek is om antwoord te geven op de vraag of, en op welke manier(en), het leren van een taal voordelen heeft voor de mentale en sociale gezondheid. Door informatie over het welzijn, het taalgebruik, sociale relaties en cognitieve metingen van deelnemers te analyseren kunnen de onderzoekers kijken of het leren van een taal positief bijdraagt aan het cognitief vermogen en de mentale gezondheid.
2. Er zal mij gevraagd worden om deel te nemen aan een tiendaagse basiscursus Engels van één uur les per dag. Dit uur bevat uitleg en spreekoefeningen betreffende alledaagse onderwerpen. In elke les zal een nieuw thema aan bod komen dat betrekking heeft op alledaagse situaties en onderwerpen (bijv. familie, kennismaken, op vakantie gaan). Ook zal er iedere les eerst tijd worden besteed aan het herhalen van de stof die eerder is behandeld. Tijdens de sessies zal er altijd ruimte zijn voor vragen. Verder zal mij gevraagd worden om deel te nemen aan twee korte testsessies vóór en na de cursus. Deze testsessies bevatten drie kleine testjes (betreffende het aanwijzen van blokjes in een bepaalde volgorde, een computertest waarbij u gevraagd wordt om op de juiste knop te drukken en een test waarbij kaartjes gesorteerd moeten worden) en een korte vragenlijst over mijn welzijn.
3. Het onderzoek zal bestaan uit twee individuele testsessies van ongeveer 30 minuten (op 30 april en 16 mei) en een gezamenlijke tiendaagse taalcursus van één uur per dag.
4. Het onderzoek zal non-invasief zijn. Dat wil zeggen dat deelnemers geen negatieve gevolgen ondervinden van het meedoen aan het onderzoek. Wel kan het voorkomen dat de cognitieve testen lichte frustratie opwekken.
5. De gegevens die verkregen zijn uit dit onderzoek zullen anoniem worden verwerkt en kunnen daarom niet bekend gemaakt worden op een individueel identificeerbare manier.
6. De onderzoekers zullen alle verdere vragen over dit onderzoek beantwoorden, nu of gedurende het verdere verloop van het onderzoek.

Datum:

Handtekening onderzoeker:

--	--

Datum:

Handtekening deelnemer:

--	--

Appendix D: The Warwick Edinburgh Mental Well-Being Scale

The WEMWBS (English)

Below are some statements about feelings and thoughts. Please tick the box that best describes your experience of each over the last 2 weeks.

STATEMENTS	None of the time	Rarely	Some of the time	Often	All of the time
I've been feeling optimistic about the future					
I've been feeling useful					
I've been feeling relaxed					
I've been feeling interested in other people					
I've had energy to spare					
I've been dealing with problems well					
I've been thinking clearly					
I've been feeling good about myself					
I've been feeling close to other people					
I've been feeling confident					
I've been able to make up my own mind about things					
I've been feeling loved					
I've been interested in new things					
I've been feeling cheerful					

The WEMWBS (Dutch)

Hieronder staan enkele stellingen over gevoelens en gedachten. Gelieve het vakje aan te kruisen dat het beste past bij uw ervaringen van de afgelopen 2 weken.

Stelling: De afgelopen 2 weken...	Nooit	Zelden	Soms	Vaak	Altijd
...was ik optimistisch over de toekomst					
...voelde ik me zinvol					
...voelde ik me ontspannen					
...was ik geïnteresseerd in andere mensen					
...had ik veel energie					
...kon ik goed omgaan met problemen					
...kon ik helder nadenken					
...voelde ik me goed over mezelf					
...voelde ik me betrokken bij andere mensen					
...voelde ik me zelfverzekerd					
...kon ik goed beslissingen nemen					
...voelde ik me geliefd					
...was ik geïnteresseerd in nieuwe dingen					
...voelde ik me vrolijk					

Appendix E: Course Evaluation Questions

1. Wat vond u van de lesmethode?
2. Wat vond u van de onderwerpen die we gedaan hebben tijdens de lessen?
 - a. Waren de onderwerpen nuttig? Welke vond u het nuttigst of het leukst?
 - b. Had u liever andere onderwerpen behandeld?
3. Hoe vond u de PPTs (de dia's op de televisie) die gebruikt werden? Waren ze duidelijk genoeg?
4. Waren de handouts (formulieren met woorden, zinnen en oefeningen) uitgebreid genoeg?
5. Waren de materialen die u kreeg voldoende? Had u liever meer of minder formulieren gekregen?
6. Wat vond u van het niveau van de lessen? Te moeilijk - te makkelijk - precies goed?
7. Was er genoeg tijd voor herhaling? / Is er voldoende tijd besteed aan herhaling?
 - a. Waren de herhalingslessen fijn of had u liever meer onderwerpen behandeld?
 - b. Ging de cursus te snel of te langzaam voor u, of was het precies goed?
8. Hoe vond u het om in een groep leeftijdsgenoten de cursus te volgen?
 - a. Wat vond u van de groepsgrootte?
9. Vond u het prettig dat de cursus 's ochtends was of had u liever een ander moment gehad?
10. Hoe vond u het dat de cursus iedere dag een uur was?
11. Wat vond u van de huiskamersetting waarin de cursus gegeven werd?
 - a. Vond u de cursus formeel/informeel?
12. Is er iets wat u liever anders had gezien/gehad/gedaan tijdens de cursus?
13. Wat voor cijfer (1-10) zou u de cursus geven?

Appendix F: Individual Cognitive and Mental Test Scores**F.1: Corsi Block Tapping Task**

Table 7

Individual scores CBTT

Participant	Forward span pre-test	Forward span post-test	Backward span pre-test	Backward span post-test
1	4	6	4	4
2	5	4	4	6
3	4	4	4	5
4	6	4	4	5
5	6	6	5	4
6	4	4	6	4
7	7	6	4	4
8	6	6	4	4
9	4	4	5	5
10	6	6	6	4

F.2: Flanker Task

Table 8A

Individual scores Flanker task (RTs congruent and incongruent trials and Flanker effect)

Participant	RT Congruent trials pre- test	RT Congruent trials post- test	RT Incongruent trials pre- test	RT incongruent trials post- test	Flanker effect pre-test	Flanker effect post- test
1	1157	1066	1191	1034	34	-32
2	1141	797	1162	824	21	27
3	1111	861	1054	918	-57	57
4	976	827	919	792	-57	-35
5	928	942	899	940	-29	-2
6	1401	1215	1353	1154	-48	-61
7	787	850	780	883	-7	33
8	1052	956	1065	943	13	-13
9	986	1039	986	992	0	-47
10	746	789	834	792	88	3

Table 8B

Individual scores Flanker task (number of errors and misses)

Participant	No. of errors pre-test	No. of errors post- test	No. of misses pre-test	No. of misses post-test
1	3	3	1	12
2	3	1	20	0
3	7	2	2	0
4	4	3	0	0
5	5	0	3	3
6	18	3	5	3
7	1	0	1	0
8	7	4	3	0
9	5	3	5	3
10	1	0	1	0

F.3: Modified Wisconsin Card Sorting Test

Table 9A

Individual scores M-WCST (number of categories correct and total errors)

Participant	Categories correct pre-test	Categories correct post-test	Number of total errors pre-test	Number of total errors post-test
1	3	4	15	12
2	5	4	11	11
3	6	6	7	8
4	3	4	19	13
5	5	7	5	4
6	1	4	21	14
7	5	5	14	6
8	5	5	10	11
9	6	5	4	14
10	4	6	15	5

Table 9B

Individual scores M-WCST (number of perseverance errors and perseverance percentage)

Participant	Perseverance errors pre-test	Perseverance errors post-test	Percentage of perseverance errors pre-test	Percentage of perseverance errors post-test
1	6	7	0.4	0.5833
2	6	7	0.5455	0.6364
3	6	3	0.8571	0.375
4	6	3	0.3158	0.2308
5	3	0	0.6	0
6	20	7	0.9524	0.5
7	6	3	0.4286	0.5
8	1	5	0.1	0.4545
9	2	6	0.5	0.4286
10	4	0	0.2667	0

F.4: Warwick Edinburgh Mental Well-Being Scale

Table 10

Individual scores WEMWBS

Participant	Mental well-being score pre-test	Mental well-being score post-test
1	59	57
2	42	45
3	54	55
4	57	57
5	57	56
6	54	55
7	44	53
8	60	58
9	56	57
10	64	62

Appendix G: Course Evaluation Results

Below, the course evaluation responses are displayed for each of the 10 participants. It should be noted that this concerned a verbal evaluation which was not recorded, and that the responses are the ones which were paraphrased at the time.

Evaluation 1

1. Wat vond u van de lesmethode? (de manier waarop geleerd werd)
Heel goed, die werkte goed.
2. Wat vond u van de onderwerpen die we gedaan hebben tijdens de lessen?
Die waren bij de tijd, dat was prima.
- 2a. Waren de onderwerpen nuttig? Welke vond u het nuttigst of het leukst?
Erg nuttig, het nuttigst vond ik het restaurant.
- 2b. Had u liever andere onderwerpen behandeld?
Nee.
3. Hoe vond u de PPTs (de dia's op de televisie) die gebruikt werden? Waren ze duidelijk genoeg?
Ja.
4. Waren de handouts (formulieren met woorden, zinnen en oefeningen) uitgebreid genoeg?
Ja, uitgebreid genoeg.
5. Waren de materialen die u kreeg voldoende? Had u liever meer of minder formulieren gekregen?
Genoeg, prima zo.
6. Wat vond u van het niveau van de lessen? Te moeilijk - te makkelijk - precies goed?
Voor mij iets te makkelijk, voor de groep precies goed.
7. Was er genoeg tijd voor herhaling? / Is er voldoende tijd besteed aan herhaling?
Ja, genoeg.
- 7a. Waren de herhalingslessen fijn of had u liever meer onderwerpen behandeld?
Nee, die lessen waren juist wel goed.
- 7b. Ging de cursus te snel of te langzaam voor u, of was het precies goed?
Voor mij iets te langzaam, maar in verhouding prima.
8. Hoe vond u het om in een groep leeftijdsgenoten de cursus te volgen?
Heel gezellig, heel goed.
- 8a. Wat vond u van de groepsgrootte?
Prima zo, moet ook niet groter.
9. Vond u het prettig dat de cursus 's ochtends was of had u liever een ander moment gehad?
's Ochtends was prettig, vooral voor deze groep.
10. Hoe vond u het dat de cursus iedere dag een uur was?
Een uur: Had iets langer gemogen, een uur is zo om, maar een uur was ook goed.

Elke dag: prettig, want je stelt je erop in en doordat je elke dag ermee bezig bent ben je er wat attenter bij. Als je er 2 dagen tussen hebt ben je veel kwijt. Het blijft beter hangen. Continuïteit is belangrijk.

11. Wat vond u van de huiskamersetting waarin de cursus gegeven werd?

Was echt heel goed, heel fijn, vooral voor deze leeftijd, veel leuker dan in een lokaal.

11a. Vond u de cursus formeel/informeel?

Informeel en dat was heel fijn.

12. Is er iets wat u liever anders had gezien/gehad/gedaan tijdens de cursus?

Nee eigenlijk niet, prima zo.

13. Wat voor cijfer (1-10) zou u de cursus geven?

9

Evaluation 2

1. Wat vond u van de lesmethode? (de manier waarop geleerd werd)

Mooi, volgde elkaar goed op, goed van niveau.

2. Wat vond u van de onderwerpen die we gedaan hebben tijdens de lessen?

Bij de tijd, alledaags.

2a. Waren de onderwerpen nuttig? Welke vond u het nuttigst of het leukst?

Wel nuttig, voor vakanties en zo, het oefenen met elkaar, het praten was het leukst, maar de onderwerpen waren allemaal leuk.

2b. Had u liever andere onderwerpen behandeld?

Nee eigenlijk niet.

3. Hoe vond u de PPTs (de dia's op de televisie) die gebruikt werden? Waren ze duidelijk genoeg?

Duidelijk genoeg, heel duidelijk.

4. Waren de handouts (formulieren met woorden, zinnen en oefeningen) uitgebreid genoeg?

Ja zeker, en het was heel fijn dat we die kregen, dan kun je het nog eens nakijken.

5. Waren de materialen die u kreeg voldoende? Had u liever meer of minder formulieren gekregen?

Nee, het was precies goed zo.

6. Wat vond u van het niveau van de lessen? Te moeilijk - te makkelijk - precies goed?

Goed, fijn.

7. Was er genoeg tijd voor herhaling? / Is er voldoende tijd besteed aan herhaling?

Ja genoeg, je moet toch oefenen.

7a. Waren de herhalingslessen fijn of had u liever meer onderwerpen behandeld?

Nee, juist wel, die waren juist handig om te oefenen.

7b. Ging de cursus te snel of te langzaam voor u, of was het precies goed?

Het was goed zo, goed bij te houden.

8. Hoe vond u het om in een groep leeftijdsgenoten de cursus te volgen?

Altijd leuk, dan zit je op hetzelfde niveau, niemand kon het, het was gezellig.

8a. Wat vond u van de groepsgrootte?

Groot genoeg, het had niet met minder gemoeten, ook niet met meer.

9. Vond u het prettig dat de cursus 's ochtends was of had u liever een ander moment gehad?

's Ochtends ben ik nog fit, dat was fijn.

10. Hoe vond u het dat de cursus iedere dag een uur was?

Een uur: uurtje was genoeg, dan kreeg je wel genoeg informatie om te verwerken.

Elke dag: dat was prima.

11. Wat vond u van de huiskamersetting waarin de cursus gegeven werd?

Is wel gezellig, hier zit je gezellig bij elkaar en je krijgt ook nog koffie.

11a. Vond u de cursus formeel/informeel?

Precies goed, informeel maar gezellig. Je moest wel opletten, maar dat was goed.

12. Is er iets wat u liever anders had gezien/gehad/gedaan tijdens de cursus?

Nee, want schrijven is ook eigenlijk niet nodig, praten is eigenlijk het voornaamste doel, dat was perfect. Ik vond het goed. Leuke cursus.

13. Wat voor cijfer (1-10) zou u de cursus geven?

8.5

Evaluation 3

1. Wat vond u van de lesmethode? (de manier waarop geleerd werd)

Leuk.

2. Wat vond u van de onderwerpen die we gedaan hebben tijdens de lessen?

Toepasselijke onderwerpen, dingen die handig zijn als je in een ander land bent, ze waren nuttig.

2a. Waren de onderwerpen nuttig? Welke vond u het nuttigst of het leukst?

Heel leuk: familie, verjaardagen, data.

2b. Had u liever andere onderwerpen behandeld?

Nee, zo ver heb ik niet nagedacht. Dit was wel genoeg.

3. Hoe vond u de PPTs (de dia's op de televisie) die gebruikt werden? Waren ze duidelijk genoeg?

De PowerPoints waren duidelijk genoeg, het was wel fijn dat er ook papieren waren want anders had je niet alles zelf thuis gehad.

4. Waren de hand-outs (formulieren met woorden, zinnen en oefeningen) uitgebreid genoeg?

Heel duidelijk, uitgebreid genoeg.

5. Waren de materialen die u kreeg voldoende? Had u liever meer of minder formulieren gekregen?

Wel genoeg.

6. Wat vond u van het niveau van de lessen? Te moeilijk - te makkelijk - precies goed?

Je kon het goed bijhouden zo.

7. Was er genoeg tijd voor herhaling? / Is er voldoende tijd besteed aan herhaling?

Ja, het programma was goed ingevuld.

7a. Waren de herhalingslessen fijn of had u liever meer onderwerpen behandeld?

Nee, het was fijn om een terugblik te hebben.

7b. Ging de cursus te snel of te langzaam voor u, of was het precies goed?

Het tempo was goed zo.

8. Hoe vond u het om in een groep leeftijdsgenoten de cursus te volgen?

Was leuk, we hadden dikke lol met elkaar. Ik kende bijna iedereen dus dat was laagdrempelig en gezellig.

8a. Wat vond u van de groepsgrootte?

Grootte was prima zo, meer was teveel geweest.

9. Vond u het prettig dat de cursus 's ochtends was of had u liever een ander moment gehad? 's Ochtends was goed, dan ben je nog het meest scherp, nog frisser.

10. Hoe vond u het dat de cursus iedere dag een uur was?

Uur was genoeg, je kreeg genoeg informatie in een uur. Het ging ook snel voorbij maar het was genoeg, ook omdat het nieuw was.

Elke dag: dat was veel, prima dat het nu afgelopen is, vijf dagen 2 uur was fijner geweest.

11. Wat vond u van de huiskamersetting waarin de cursus gegeven werd?

Prettig, omdat het zo vertrouwd was, net alsof je op visite was.

11a. Vond u de cursus formeel/informeel?

Vrij informeel, ongedwongen sfeer, fijn.

12. Is er iets wat u liever anders had gezien/gehad/gedaan tijdens de cursus?

Nee, eigenlijk niet.

13. Wat voor cijfer (1-10) zou u de cursus geven?

8

Evaluation 4

1. Wat vond u van de lesmethode? (de manier waarop geleerd werd)

Goed, maar iets meer individuele aandacht was fijn geweest. Iedereen riep soms wat. Soms had je iets gericht vragen mogen stellen. Soms was het iets te klassikaal, iets te vrijblijvend.

2. Wat vond u van de onderwerpen die we gedaan hebben tijdens de lessen?

Goede onderwerpen, leuk, veelzijdig, heel veel aan de orde. Uitgebreid. Daar kun je ook wat mee.

2a. Waren de onderwerpen nuttig? Welke vond u het nuttigst of het leukst?

Winkels waren iets minder leuk, ik ben geen winkelaar, voor mij niet. Interesse is minder groot. Maar de rest was allemaal interessant.

2b. Had u liever andere onderwerpen behandeld?

Nee.

3. Hoe vond u de PPTs (de dia's op de televisie) die gebruikt werden? Waren ze duidelijk genoeg?

Duidelijk, goed.

4. Waren de hand-outs (formulieren met woorden, zinnen en oefeningen) uitgebreid genoeg?

Soms stond er iets niet op en dan kon je het opschrijven, maar dat was geen probleem. Het was voldoende en dan kon je zelf iets toegeven. Het totaal was wel gewoon heel goed.

5. Waren de materialen die u kreeg voldoende? Had u liever meer of minder formulieren gekregen?

Voldoende, ja, en onderwerpen waren ruim voldoende.

6. Wat vond u van het niveau van de lessen? Te moeilijk - te makkelijk - precies goed?

Niveau was wel goed zo. Ik kon het goed bijbenen en ik heb ooit technisch Engels gehad op school en dat is blijven hangen, dat kwam nu weer naar boven. Moeilijke woorden bleven niet hangen, maar die ga ik voor mezelf nog opschrijven, zodat ik ze zelf nog door kan nemen en kan leren.

7. Was er genoeg tijd voor herhaling? / Is er voldoende tijd besteed aan herhaling?

Ja.

7a. Waren de herhalingslessen fijn of had u liever meer onderwerpen behandeld?

Nee die waren wel goed, herhaling is goed.

7b. Ging de cursus te snel of te langzaam voor u, of was het precies goed?

Tempo was goed, dit tempo past wel bij mij. Je moet een beetje rekening met elkaar houden, iedereen kon meedoen zo. Iets gerichter beurten geven was handig geweest.

8. Hoe vond u het om in een groep leeftijdsgenoten de cursus te volgen?

Goed, was prima, maar als het jongeren geweest waren was het ook geen probleem geweest. Alleen dan was de stof waarschijnlijk anders geweest en dat was nu juist wel fijn. Interesses liggen verder uit elkaar als je een gemengde groep hebt.

8a. Wat vond u van de groepsgrootte?

Wel goed, 10 is een mooie groep. Iedereen was bekend en dat was ook fijn.

9. Vond u het prettig dat de cursus 's ochtends was of had u liever een ander moment gehad?

Het liefst 's avonds. Want voor de tijd doe je niets 's ochtends en na de tijd ook niet, dus je bent de hele morgen weg voor één uurtje. Ik ben een avondmens, ik kan 's avonds heel lang scherp blijven.

10. Hoe vond u het dat de cursus iedere dag een uur was?

Een uur: 2 uur was leuker geweest. Dan kun je meer doen.

Elke dag: 5 keer 2 uur zou ook fijn zijn. Bij elke dag heb je weinig tijd om het na te kijken. Daar heb je meer tijd voor als er tijd tussen zit.

11. Wat vond u van de huiskamersetting waarin de cursus gegeven werd?

Wel prettig.

11a. Vond u de cursus formeel/informeel?

Informeel en dat was fijn, lekker verzorgd met koffie en koeken, goed geregeld.

12. Is er iets wat u liever anders had gezien/gehad/gedaan tijdens de cursus?

Iets gerichter dus. Willekeurige beurten zou beter geweest zijn, want nu kon iedereen zich voorbereiden op wat hij/zij moest zeggen.

13. Wat voor cijfer (1-10) zou u de cursus geven?

8. Ik vond het heel goed en heb het als prettig ervaren, de meeste moeite was dat het elke dag een uurtje was. Dat ik de enige man was, was niet erg. Ik heb geen spijt van het meedoen.

Evaluation 5

1. Wat vond u van de lesmethode? (de manier waarop geleerd werd)

Overzichtelijk, prima, goed onderbouwd.

2. Wat vond u van de onderwerpen die we gedaan hebben tijdens de lessen?

Prima onderwerpen.

2a. Waren de onderwerpen nuttig? Welke vond u het nuttigst of het leukst?

Zeker nuttig, uit ervaring vond ik het zeker nuttig. Het restaurant was wel leuk en nuttig.

2b. Had u liever andere onderwerpen behandeld?

Nee, ik heb er echt wat aan gehad.

3. Hoe vond u de PPTs (de dia's op de televisie) die gebruikt werden? Waren ze duidelijk genoeg?

Prima, duidelijk genoeg.

4. Waren de handouts (formulieren met woorden, zinnen en oefeningen) uitgebreid genoeg?

Ja zeker, voor mij wel.

5. Waren de materialen die u kreeg voldoende? Had u liever meer of minder formulieren gekregen?

Nee, het was goed zo.

6. Wat vond u van het niveau van de lessen? Te moeilijk - te makkelijk - precies goed?

Dit was een fijne opfriscursus, ik kwam woorden tegen die ik al wel kende, ik kende al wel dingen. Het niveau voor groep was goed. Voor mezelf gaf dit juist wat zelfvertrouwen dat ik dit blijkbaar toch kon.

7. Was er genoeg tijd voor herhaling? / Is er voldoende tijd besteed aan herhaling?

Genoeg herhaling.

7a. Waren de herhalingslessen fijn of had u liever meer onderwerpen behandeld?

Nee, het was wel leuk en goed om even te herhalen.

7b. Ging de cursus te snel of te langzaam voor u, of was het precies goed?

Niet te snel, ging goed.

8. Hoe vond u het om in een groep leeftijdsgenoten de cursus te volgen?

Prima, was leuk.

8a. Wat vond u van de groepsgrootte?

De grootte was prima.

9. Vond u het prettig dat de cursus 's ochtends was of had u liever een ander moment gehad?

Ik heb werk en dat is vaak 's ochtends, dus ik heb veel geschoven met afspraken, maar verder prima.

10. Hoe vond u het dat de cursus iedere dag een uur was?

Uur: goed, als het langer is moet je langer je aandacht erbij houden.

Elke dag: was niet storend, alleen jammer dat ik een paar keer niet kon.

11. Wat vond u van de huiskamersetting waarin de cursus gegeven werd?

Heel wat anders dan in een klaslokaal maar dat was prima.

11a. Vond u de cursus formeel/informeel?

Informeel en dat was prettig, dat af en toe een grapje ook mag.

12. Is er iets wat u liever anders had gezien/gehad/gedaan tijdens de cursus?

Nee

13. Wat voor cijfer (1-10) zou u de cursus geven?

8

Evaluation 6

1. Wat vond u van de lesmethode? (de manier waarop geleerd werd)
Heel fijn, goede uitleg, fijn dat het schrijven niet zo belangrijk was als spreken.
2. Wat vond u van de onderwerpen die we gedaan hebben tijdens de lessen?
Leuke onderwerpen, jammer dat ik met het restaurant er niet was.
- 2a. Waren de onderwerpen nuttig? Welke vond u het nuttigst of het leukst?
Ja, namen van kinderen, familie was heel leuk. Ook de dokter was heel handig.
Eigenlijk vond ik het helemaal geweldig. Geen voorkeur.
- 2b. Had u liever andere onderwerpen behandeld?
Weet ik niet, nee.
3. Hoe vond u de PPTs (de dia's op de televisie) die gebruikt werden? Waren ze duidelijk genoeg?
Ja.
4. Waren de hand-outs (formulieren met woorden, zinnen en oefeningen) uitgebreid genoeg?
Ja ook.
5. Waren de materialen die u kreeg voldoende? Had u liever meer of minder formulieren gekregen?
Wel goed, ik miste niets, papieren waren wel leuk zodat je het nog een keer na kon kijken.
6. Wat vond u van het niveau van de lessen? Te moeilijk - te makkelijk - precies goed?
Dat was goed, niet te moeilijk.
7. Was er genoeg tijd voor herhaling? / Is er voldoende tijd besteed aan herhaling?
Ja
- 7a. Waren de herhalingslessen fijn of had u liever meer onderwerpen behandeld?
Nee, die waren juist goed, zodat je het niet zo snel vergeet en het meer opfrist.
- 7b. Ging de cursus te snel of te langzaam voor u, of was het precies goed?
Tempo was goed niet te snel
8. Hoe vond u het om in een groep leeftijdsgenoten de cursus te volgen?
Was leuk, was heel gezellig.
- 8a. Wat vond u van de groepsgrootte?
Goed
9. Vond u het prettig dat de cursus 's ochtends was of had u liever een ander moment gehad?
's Ochtends was wel goed, maakt niet zoveel uit
10. Hoe vond u het dat de cursus iedere dag een uur was?
Een uur: Ging snel voorbij, mocht wel anderhalf uur zijn.
Elke dag: dat was veel, best pittig. Je onthoudt er wel veel door, maar het was wel fijn dat het afgelopen is. Het was hartstikke leuk, maar wel pittig.
11. Wat vond u van de huiskamersetting waarin de cursus gegeven werd?
Dit is juist intiem, heel gezellig met zo'n groep, juist met ouderen, als je in een lokaal zit is het allemaal zo kil en afstandelijk en dit is gezellig bij elkaar aan de tafel.
- 11a. Vond u de cursus formeel/informeel?
Heel ontspannen, dat het informeel was. Dat was fijn.
12. Is er iets wat u liever anders had gezien/gehad/gedaan tijdens de cursus?

Weet ik niet.

13. Wat voor cijfer (1-10) zou u de cursus geven?

Zeker een 8.5, of een 9. Ja want je kon hierdoor echt spelenderwijs leren. Dat was leuk.

Evaluation 7

1. Wat vond u van de lesmethode? (de manier waarop geleerd werd)

Heel goed.

2. Wat vond u van de onderwerpen die we gedaan hebben tijdens de lessen?

Goede onderwerpen, die komen van pas, nuttig.

2a. Waren de onderwerpen nuttig? Welke vond u het nuttigst of het leukst?

Menselijk lichaam heb ik gemist, dat was jammer, maar de rest was heel leuk.

2b. Had u liever andere onderwerpen behandeld?

Nee, niet echt.

3. Hoe vond u de PPTs (de dia's op de televisie) die gebruikt werden? Waren ze duidelijk genoeg?

Zeker duidelijk.

4. Waren de handouts (formulieren met woorden, zinnen en oefeningen) uitgebreid genoeg?

Mooie papieren, daar kun je op terugkijken, stond genoeg op, je kunt alles opzoeken.

5. Waren de materialen die u kreeg voldoende? Had u liever meer of minder formulieren gekregen?

Stond genoeg op, je kon het er zo bij schrijven als het er niet op stond.

6. Wat vond u van het niveau van de lessen? Te moeilijk - te makkelijk - precies goed?

Ik had alleen een beetje huishoudschool Engels, het niveau was daardoor goed.

7. Was er genoeg tijd voor herhaling? / Is er voldoende tijd besteed aan herhaling?

Ja.

7a. Waren de herhalingslessen fijn of had u liever meer onderwerpen behandeld?

Nee, herhaling was goed, dan kun je oefenen met praten, dan leer je dat beter.

7b. Ging de cursus te snel of te langzaam voor u, of was het precies goed?

Tempo was goed.

8. Hoe vond u het om in een groep leeftijdsgenoten de cursus te volgen?

Was leuk, leuk dat je al mensen kende, daardoor was je veel opener met elkaar.

8a. Wat vond u van de groepsgrootte?

Nee, dat kon mooi hier in de keuken, dan kreeg iedereen tenminste nog een beurt.

9. Vond u het prettig dat de cursus 's ochtends was of had u liever een ander moment gehad?

's Ochtends was fijn, dan heb je de rest van de dag nog.

10. Hoe vond u het dat de cursus iedere dag een uur was?

Een uur: was goed, dan heb je de aandacht er nog bij en anders verslapt die.

Iedere dag: dat was veel, dat was pittig en dat doe ik niet weer, dit had ik niet nog een week gekund.

11. Wat vond u van de huiskamersetting waarin de cursus gegeven werd?

Ja, was leuk, kon allemaal mooi. Het was heel ongedwongen, met koffie erbij.

11a. Vond u de cursus formeel/informeel?

Informeel, ja was fijn.

12. Is er iets wat u liever anders had gezien/gehad/gedaan tijdens de cursus?

Nee, het was goed zo.

13. Wat voor cijfer (1-10) zou u de cursus geven?

8

Evaluation 8

1. Wat vond u van de lesmethode? (de manier waarop geleerd werd)

Goed, heel leerzaam, ik wist niets van tevoren.

2. Wat vond u van de onderwerpen die we gedaan hebben tijdens de lessen?

Ja, leuke onderwerpen.

2a. Waren de onderwerpen nuttig? Welke vond u het nuttigst of het leukst?

Ja. Kunnen zeker nuttig zijn, ja. Er was niets wat ik niet leuk vond, menselijk lichaam en het restaurant waren wel leuk.

2b. Had u liever andere onderwerpen behandeld?

Ik had wel iets bedacht maar nu weet ik het niet meer.

3. Hoe vond u de PPTs (de dia's op de televisie) die gebruikt werden? Waren ze duidelijk genoeg?

Het was duidelijk genoeg.

4. Waren de handouts (formulieren met woorden, zinnen en oefeningen) uitgebreid genoeg?

Duidelijk, de opdrachten waren soms moeilijk maar alles was wel duidelijk.

5. Waren de materialen die u kreeg voldoende? Had u liever meer of minder formulieren gekregen?

Ja, het was voldoende.

6. Wat vond u van het niveau van de lessen? Te moeilijk - te makkelijk - precies goed?

Soms was het moeilijk, maar niet te.

7. Was er genoeg tijd voor herhaling? / Is er voldoende tijd besteed aan herhaling?

Ja, genoeg.

7a. Waren de herhalingslessen fijn of had u liever meer onderwerpen behandeld?

Ja, herhaling was juist wel nuttig.

7b. Ging de cursus te snel of te langzaam voor u, of was het precies goed?

De tijd was elke dag zo voorbij.

8. Hoe vond u het om in een groep leeftijdsgenoten de cursus te volgen?

Dat was leuk.

8a. Wat vond u van de groepsgrootte?

Mooie groep.

9. Vond u het prettig dat de cursus 's ochtends was of had u liever een ander moment gehad?

's Ochtends was wel mooi.

10. Hoe vond u het dat de cursus iedere dag een uur was?

Uur: ja dat was goed, bij 2 uur wordt de aandacht snel minder.

Elke dag: op zich wel mooi, maar je had niet thuis de tijd om het na te kijken, want je hebt nog meer te doen, en nu moest het elke keer 's ochtends gauw.

11. Wat vond u van de huiskamersetting waarin de cursus gegeven werd?

Gezelliger dan in een lokaal.

11a. Vond u de cursus formeel/informeel?

Het was informeel en dat was fijn.

12. Is er iets wat u liever anders had gezien/gehad/gedaan tijdens de cursus?

Nee, eigenlijk niet.

13. Wat voor cijfer (1-10) zou u de cursus geven?

9

Evaluation 9

1. Wat vond u van de lesmethode? (de manier waarop geleerd werd)

Lesmethode vond ik heel goed, heel leuk. Dat het gericht was op spreken was goed.

Kijk aan het begin denk je: oei dat is moeilijk. Maar de volgende lessen wen je eraan en dan moet je steeds meer onthouden. Maar ik denk dat het goed is dat het elke dag was want dan zit het nog vers in het geheugen.

2. Wat vond u van de onderwerpen die we gedaan hebben tijdens de lessen?

De onderwerpen vond ik heel erg leuk en heel erg van toepassing op het dagelijks leven. Ze waren nuttig en ook, als je je naam zegt en geboortedatum en tel. nummer, dan heb je gewoon woorden en cijfers door elkaar en dat is heel goed.

2a. Waren de onderwerpen nuttig? Welke vond u het nuttigst of het leukst?

Eigenlijk was alles wel leuk.

2b. Had u liever andere onderwerpen behandeld?

Daar heb ik eigenlijk niet over nagedacht.

3. Hoe vond u de PPTs (de dia's op de televisie) die gebruikt werden? Waren ze duidelijk genoeg?

Heel leuk, ze waren duidelijk, dan zie je het meteen, en het was heel leuk dat we het ook op papier kregen en dat we ook nog opdrachten kregen waar we thuis mee aan de slag konden. Dan ben je er thuis ook even weer mee bezig. Dat vond ik heel leuk.

4. Waren de hand-outs (formulieren met woorden, zinnen en oefeningen) uitgebreid genoeg?

Ja.

5. Waren de materialen die u kreeg voldoende? Had u liever meer of minder formulieren gekregen?

Best uitgebreid, was goed.

6. Wat vond u van het niveau van de lessen? Te moeilijk - te makkelijk - precies goed?

Te makkelijk niet, maar ook niet echt te moeilijk, het was gewoon voor de meesten van ons wel het goede niveau.

7. Was er genoeg tijd voor herhaling? / Is er voldoende tijd besteed aan herhaling?

Ja, vond ik wel.

7a. Waren de herhalingslessen fijn of had u liever meer onderwerpen behandeld?

Nee, juist die herhalingslessen waren goed zodat je weer terugging naar het begin, dat was heel prettig. De laatste les ging de stof van de eerste dagen al veel beter, want dat was de derde keer dat je het deed.

7b. Ging de cursus te snel of te langzaam voor u, of was het precies goed?

Goed tempo.

8. Hoe vond u het om in een groep leeftijdsgenoten de cursus te volgen?

Dat vond ik heel erg leuk, want uiteindelijk zit je allemaal in hetzelfde schuitje. We zijn allemaal van hetzelfde soort, want onze hobby's waren hetzelfde, we vonden dezelfde dingen leuk, enzovoort

8a. Wat vond u van de groepsgrootte?

Leuke groep zo, dan komt ook iedereen aan de beurt, bij een groep van 20 komt niet iedereen aan de beurt.

9. Vond u het prettig dat de cursus 's ochtends was of had u liever een ander moment gehad? 's Ochtends was goed.

10. Hoe vond u het dat de cursus iedere dag een uur was?

Een uur: is best kort, had wel anderhalf uur gemogen, dat was niet vervelend geweest. Elke dag: dat was vrij veel, je bent toch elke dag een ochtend kwijt, maar dat vond ik niet erg. Maar het is ook heel goed en helpt je om bij de les te blijven, want als het één keer per week was, ga je er niet iedere avond nog mee bezig en nu wel. Anders stel je het uit tot de laatste avond en dan ben je heel veel weer kwijt.

11. Wat vond u van de huiskamersetting waarin de cursus gegeven werd?

Dit was heel gezellig, met koffie en dat was leuk.

11a. Vond u de cursus formeel/informeel?

Informeel en dat was fijn. Je manier van lesgeven was prettig, je stem was prettig en je geeft iedereen aandacht.

12. Is er iets wat u liever anders had gezien/gehad/gedaan tijdens de cursus?

Nee, weet ik niet. We hebben heel veel onderwerpen gedaan die gewoon van toepassing zijn op het leven en dat was handig. En het is maar tien dagen. Dit was goed. Ik vond het klokkijken heel leuk, want ik merkte dat sommige anderen daar heel veel moeite mee hadden en dat had ik dus niet. Misschien was het nog wel leuk geweest om eens van plaats te wisselen. Nu praatten we steeds met dezelfde persoon. We zijn natuurlijk kuddedieren en gaan net als in de kerk meestal op dezelfde plek zitten.

13. Wat voor cijfer (1-10) zou u de cursus geven?

8 of een 9. Dit is echt iets wat je gewoon op kunt starten als officiële cursus voor beginners. Er komt ook steeds meer terug van een cursus die ik heb gevolgd in het verleden. Steeds meer woorden en uitdrukkingen en dat vind ik leuk.

Evaluation 10

1. Wat vond u van de lesmethode? (de manier waarop geleerd werd)

Die was heel goed.

2. Wat vond u van de onderwerpen die we gedaan hebben tijdens de lessen?

Ja, dit was wel echt het begin van het Engels, voor als je er helemaal niets van wist, dus het was heel interessant. Ik begon bij helemaal niets. Waar jullie mee begonnen sloot daar goed op aan.

2a. Waren de onderwerpen nuttig? Welke vond u het nuttigst of het leukst?

Ja. Het tellen en klokkijken waren nuttig en de lichaamsdelen ook.

2b. Had u liever andere onderwerpen behandeld?

Nee, ik weet zo niets.

3. Hoe vond u de PPTs (de dia's op de televisie) die gebruikt werden? Waren ze duidelijk genoeg?

Ja.

4. Waren de hand-outs (formulieren met woorden, zinnen en oefeningen) uitgebreid genoeg?

Die waren heel duidelijk, die vond ik goed en waren ook uitgebreid genoeg zodat je het weer na kunt kijken. De beginselen van de taal.

5. Waren de materialen die u kreeg voldoende? Had u liever meer of minder formulieren gekregen?

Was genoeg.

6. Wat vond u van het niveau van de lessen? Te moeilijk - te makkelijk - precies goed?

Voor mij was het wel goed. Ik heb er veel van geleerd. Niet te moeilijk.

7. Was er genoeg tijd voor herhaling? / Is er voldoende tijd besteed aan herhaling?

Ja vond ik wel.

7a. Waren de herhalingslessen fijn of had u liever meer onderwerpen behandeld?

Nee, juist die lessen waren goed, dat je het herhaalt en het daardoor beter onthoudt.

7b. Ging de cursus te snel of te langzaam voor u, of was het precies goed?

Was goed zo.

8. Hoe vond u het om in een groep leeftijdsgenoten de cursus te volgen?

Ja, vond ik heel leuk, hartstikke leuk, was heel gezellig.

8a. Wat vond u van de groepsgrootte?

Ja, dat kon allemaal mooi hier in de keuken. Niet te groot.

9. Vond u het prettig dat de cursus 's ochtends was of had u liever een ander moment gehad?

Maakt me niet zoveel uit.

10. Hoe vond u het dat de cursus iedere dag een uur was?

Een uur: was genoeg. 2 uur was teveel geweest. Je moet het ook kunnen opnemen. Bij meer dan 1 uur word je moe.

Elke dag: dat was een beetje extreem, maar je merkte hierdoor wel direct dat wat je de dag ervoor gedaan had beter blijft zitten.

11. Wat vond u van de huiskamersetting waarin de cursus gegeven werd?

Wel goed, had niet zoveel uitgemaakt.

11a. Vond u de cursus formeel/informeel?

Nee, dit was goed zo, informeel.

12. Is er iets wat u liever anders had gezien/gehad/gedaan tijdens de cursus?

Ik zou het zo niet weten.

13. Wat voor cijfer (1-10) zou u de cursus geven?

8 echt wel. Een 8+.

Colofon

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Nederlandse samenvatting

Nederland vergrijst in een rap tempo en daarmee wordt het steeds belangrijker om te weten hoe we gezond oud kunnen worden. Verschillende onderzoeken hebben aangetoond dat tweetaligheid bij ouderen cognitieve voordelen biedt, de hersenen van ouderen die hun leven lang meerdere talen hebben gesproken lijken flexibeler te functioneren. Daarom probeert dit onderzoek te kijken of het leren van een tweede taal op gevorderde leeftijd (boven de 65) dezelfde cognitieve voordelen heeft.

Er werden twee onderzoeken opgezet, een voorbereidend onderzoek naar de ervaringen van ouderen met het leren van een vreemde taal en hun verwachtingen bij het leren van een nieuwe taal op latere leeftijd. In het tweede onderdeel van de studie werd in de praktijk gekeken naar de potentiële cognitieve voordelen van taalleren onder ouderen. Er werd een 10 uur durende taalcursus Engels gegeven aan 10 ouderen, verspreid over twee weken. Voor en na de cursus werden er cognitieve testen uitgevoerd: de *Corsi Block Tapping Task*, de *Flanker Task*, en de *Modified Wisconsin Card Sorting Test*. Daarnaast werd het geestelijke welzijn getest door gebruik te maken van de *Warwick-Edinburgh Mental Well-Being Scale*. Uit de tests kwam naar voren dat zelfs bij een korte taalcursus cognitieve verbeteringen te behalen zijn. De ouderen konden na de cursus significant beter tussen verschillende cognitieve taken wisselen en tijdelijke taken onderdrukken die op dat moment niet van belang waren. Er was geen significante vooruitgang zichtbaar in het werkgeheugen of het geestelijk welzijn, maar dat kan ook het gevolg zijn van de korte cursusperiode. Het leren van een tweede taal zou dus een manier kunnen zijn om cognitieve achteruitgang tegen te gaan. Er is echter meer en intensiever onderzoek nodig om te achterhalen waar de voordelen precies liggen.